



CO-SUSTAIN

Pathways for CO-creation between local authorities
and collective actions for a SUSTAINable transition

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**Cross-case analysis of the triggers, management
and impact of latent and manifest forms of political
participation**

Deliverable 2.2



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Main author(s)	Jana Plöchl, Patrick Scherhauser, Michael Braito, Fiona de Fontana, Michael Klingler, Daniel Körner, Nathalie Spittler (BOKU) Federica Giardina, Nona Galvany, Priscila Rivera, Joana Mundó (ECOSERVEIS) Wit Hubert, Wojciech Kowalik, Aleksandra Komorowska, Monika Pełowska, Dominik Kryzia, Lidia Gawlik (IGSMiE PAN) Maare Käis, Matti Kovo (LUT) Marina Frolova, Juan Carlos Osorio-Aravena, Belén Pérez-Pérez (UGR) Lorenza Giorgetti, Davide Grasso, Vittorio Martone, Dario Padovan, Alessandro Sciullo (UNITO) Bianka Plüschke-Altof, Helina Tamm, Dagmar Narusson, Aet Annist, Lilian Pungas, Anneli Kährik (UT)

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DEM	Demonstrator, pilot, prototype, plan designs	
DEC	Websites, patents filing, press & media actions, videos, etc.	
DATA	Data sets, microdata, etc.	
DMP	Data management plan	
ETHICS	Deliverables related to ethics issues	
SECURITY	Deliverables related to security issues	
OTHER	Software, technical diagram, algorithms, models, etc.	

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1. PROJECT ABSTRACT

In Western democracies, traditional institutional participation is on the decline while non-institutional participation has been increasing. Non-institutional participation for the climate transition often relies on a prefigurative approach, thus creating spaces to incubate alternative ideas, and novel forms of political participation (so-called 'niches'). Empowering these forms of political participation to encourage niche innovations will drive the radical yet necessary changes in the socio-technical system for a climate transition. The CO-SUSTAIN project seeks to address this opportunity for a democratic climate transition, by defining and testing new democratic pathways enabling local policymakers to support various and novel forms of political participation and empowering citizens to act for a sustainable transition.

To develop a better understanding of political participation linked to environmental, political and societal imperatives, CO-SUSTAIN studied 19 historic examples in 6 different European countries covering both latent and manifest forms of political participation defined by Ekman: involvement, civic engagement, formal political participation, and activism. It uses institutional ethnography and system mapping to understand the dynamics of the participation and its management, thus delivering best practices to stimulate and support political participation around these imperatives. These best practices will serve to define interventions for solution co-creation in four case studies, one for each form of political participation: involvement through Spanish energy communities, civic engagement through Food Solidarity in Turin (IT), manifest political participation through participatory processes promoted by the government in Northern Europe (EE, FI) and activism through the Westbahnhof initiative (AT). The outputs and outcomes of the deliberations will be assessed to draw conclusions for more democratic climate policymaking across Europe.

2. EXECUTIVE SUMMARY

The report provides a comprehensive cross-case analysis of the triggers, management, and impacts of latent and manifest forms of political participation, with a focus on Collective Action Initiatives (CAIs) across diverse socio-political and environmental contexts. The report employs a multi-methodological approach, integrating semi-structured interviews, textual analysis, social network analysis, and system mapping within the Multi-Level Perspective (MLP) framework. This analysis aims to elucidate the dynamics of political participation, its evolution, and its implications for democratic innovation and sustainability transitions.

The primary objective of this report is to investigate the origins, evolution, organization, and impacts of CAIs, with a focus on their interactions with socio-technical regimes and broader systemic structures. The report examines 18 historical examples (HEs) across six European countries, representing various forms of political participation, including involvement, civic engagement, formal political participation, and activism. These cases are analyzed to identify best practices and lessons for fostering democratic pathways and empowering citizens to act in the context of sustainability transitions.

The report identifies diverse triggers for political participation, ranging from environmental crises (e.g., floods, air quality issues) to socio-political injustices (e.g., energy poverty, urban planning controversies). These triggers often catalyze grassroots mobilization and the formation of CAIs, which act as incubators for alternative ideas and practices. For instance, the Genoa floods of 2011 and 2014 highlighted the role of urban planning failures and environmental mismanagement in mobilizing collective action.

The management of CAIs is characterized by a tension between grassroots spontaneity and institutional constraints. While CAIs often emerge as bottom-up initiatives, their sustainability and impact depend on their ability to navigate and influence regime-level structures. The report highlights examples of successful integration, such as the Vienna Climate Team's participatory budgeting process, which institutionalized citizen input into local climate policy. Conversely, cases like the Northern District of Granada reveal the challenges of overcoming structural inequalities and institutional neglect in addressing energy poverty.

The impacts of CAIs are multifaceted, encompassing social, political, and environmental dimensions. On a social level, CAIs foster community solidarity and empower marginalized groups. Politically, they challenge existing power dynamics and contribute to policy innovation, as seen in the anti-nuclear movement in Austria, which transitioned from activism to policy enforcement. Environmentally, CAIs play a critical role in advancing sustainability transitions, such as the adoption of renewable energy and anti-smog policies in Krakow.

The analysis reveals an evolution in the discourse surrounding CAIs, from crisis-driven narratives to structured policy debates. Early texts often emphasize urgency and activism, while later materials reflect a shift towards legal and technical language, indicating the institutionalization of CAIs within broader governance frameworks. This transition underscores the capacity of CAIs to influence systemic change and reshape public discourse.

D2.2 underscores the transformative potential of political participation in addressing environmental, social, and political challenges. By analyzing the triggers, management, and impacts of CAIs, the report provides valuable insights into the dynamics of collective action and its role in fostering democratic innovation and sustainability transitions. The findings highlight the need for integrated, inclusive, and context-sensitive approaches to support CAIs and empower citizens as agents of change. These lessons are critical for policymakers, researchers, and practitioners seeking to advance democratic pathways and address the pressing imperatives of climate change and social justice.

3. SCHEME FOR ANALYSES

The following scheme illustrates the tasks, timelines, methods and data sources used to compile the deliverable. It exemplifies the integrated approach of CO-SUSTAIN towards investigating latent and manifest forms of political participation.

Scheme for Analysis of HEs Deliverables, tasks and methods

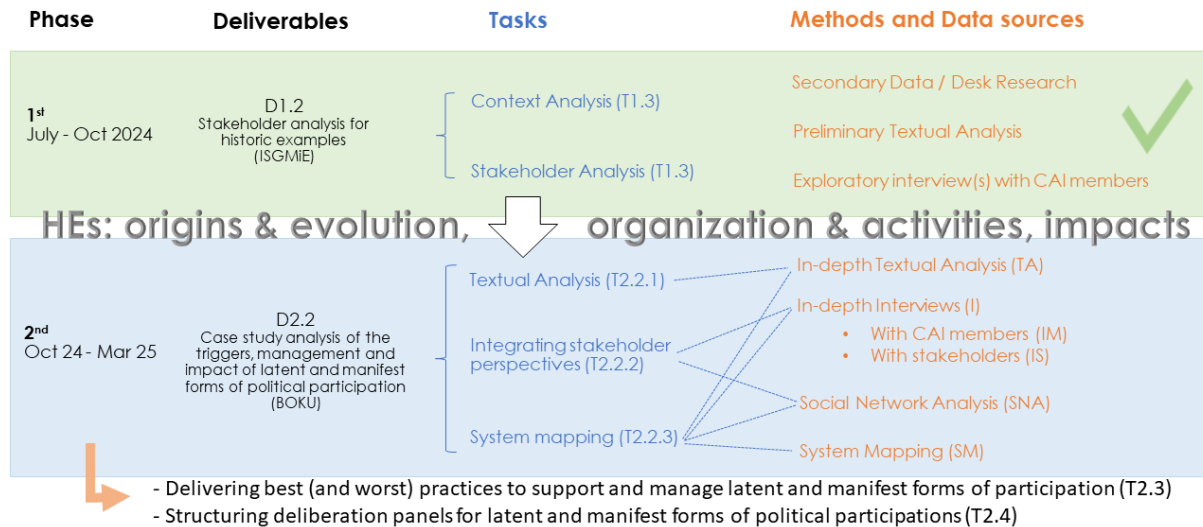


Figure 3.1: Overview of the analysis and methodology of D2.2

4. METHODOLOGY

The methodology used for this deliverable focuses on analyzing Collective Action Initiatives (CAIs) based on the Multi-Level Perspective (MLP) framework. It summarizes findings on the origins, evolution, organization, activities, and impacts of 19 different Historical Examples (HEs) in the CO-SUSTAIN project.

The investigation is guided by key research questions, including understanding the origins and forms of CAIs, their evolution over time and space, their interactions with regimes or systems, and their outcomes in fostering novel democratic pathways. To address these questions, the work on this deliverable integrates multiple research methods: Semi-structured Interviews (I), Textual Analysis (TA), Social Network Analysis (SNA), and System Mapping (SM). Each method contributes unique insights to the overall analysis.

Semi-structured interviews were designed to gather qualitative data from CAI members and stakeholders about the origins, development, and impacts of CAIs. The process included identifying and contacting interviewees, adapting interview guides to specific HEs, conducting and transcribing interviews, and analyzing the transcripts. The interviews provided detailed narratives that complement the findings from SNA and SM.

Textual Analysis (TA) aimed to study texts to uncover institutional realities and provide data for SNA, SM, and HE analysis. The process involved preparing a corpus of relevant texts, conducting in-depth analysis of selected documents, and summarizing results in an analytical table and reflection document. This method was expected to reveal dominant discourses, turning points in the MLP timeline, and power relations within CAIs.

Social Network Analysis (SNA) focused on mapping relationships and interactions between stakeholders, with an emphasis on power dynamics and roles. Stakeholders were categorized based on attributes such as role, resources, and impact, and their relationships were mapped using Kumu software. The resulting

network mappings have been validated through interviews or consultations and visually synthesize stakeholder dynamics.

System Mapping (SM) aimed to understand system behavior and development by mapping patterns, trends, and causal structures. This involved defining narratives and patterns at the regime and initiative levels, identifying archetypes, and mapping dynamics using Causal Loop Diagrams (CLDs). The outcome was a set of system maps for regime and niche levels, offering insights into system structures and dynamics.

The methods were interlinked to provide a comprehensive analysis. Textual Analysis informed SNA and SM by identifying patterns and trends, while interviews added qualitative depth to these methods by exploring stakeholder dynamics and system structures. SNA and SM complemented each other by mapping relationships and causal influences, respectively. Therefore, the triangulation of findings across methods was encouraged to enhance the quality of the knowledge production. In addition, the MLP framework served as the overarching conceptual approach, guiding the integration of findings across methods.

Overall, D2.2 includes a comprehensive report summarizing the origins, evolution, organization, activities, and impacts of each HE. It also features visualizations and descriptions based on the MLP framework, along with annexes containing supporting documents. The findings from this phase will contribute to subsequent tasks, such as analyzing best and worst practices (T2.3) and linking outcomes to the Impact Assessment Framework (T1.4).

In summary, this procedure provided a structured and methodologically robust approach investigating HEs. By adhering to the outlined guidelines and instructions, the deliverable aims to deliver a thorough analysis of CAIs, contributing to a deeper understanding of political participation and democratic innovation.

5. HISTORIC EXAMPLES OF INVOLVEMENT

5.1 OurPower Energy Cooperative (AT)

5.1.1 Interviews

5.1.1.1 Documentation of application of the method

The qualitative interviews followed a semi-structured interview guide which was adapted to the context of the interview partners beforehand, to be able to focus on each interview partner's specific perspective and expertise. Interviews were conducted between September 2024 and March 2025, with durations between ~60-90 minutes, and an in-person format was preferred wherever possible. An overview of the characteristics of each interview is shown in table 5.1.1.

Table 5.1.1: List of interviews

Code	Interviewee (position or function)	Date	Duration	Format
OP01	Founding member and member of the CAI's managing board	17.9.2024	68 min	in-person
OP02	Member of the CAI's core team since its foundation	30.1.2025	89 min	in-person
OP03	Founding member and member of the CAI's managing board	7.2.2025	78 min	in-person
OP04	Two members of the CAI (selling and buying electricity through OurPower)	11.2.2025	56 min	online
OP05	Expert on the Austrian energy system	5.3.2025	73 min	in-person

5.1.1.2 Results

Description and objective of the CAI

OurPower was founded in 2018 by a group of people with different backgrounds and expertise relating to Austria's renewable energy sector, including renewable energy producers and entrepreneurs, regional pioneers in renewable energy and citizen engagement as well as people with experience in (regional) policy making for renewable energy. The initiative's goals revolve around creating more opportunities for citizens to take an active role in the Austrian energy system, as citizen empowerment and participation are seen as key prerequisites for a successful transition to a renewable energy system (OP01, OP02, OP03). This transition is framed not just as a technological change requiring technological innovation, but also social innovations and new ways of thinking about energy: "Energy transition also means that it is much more small-scale and democratic, so everyone can get involved" (OP01, pos. 7). To this end, the initiative has established an online peer-to-peer marketplace where citizens can sell their privately produced renewable electricity directly to other citizens.

From the very beginning, independence from the global energy market and fossil fuels as well as the financing of community energy systems were among the central visions. OurPower envisions regional

energy markets with fair and stable prices as an alternative to the current energy system and focuses on creating relationships between (small-scale) energy producers and consumers (OP01, OP02, OP03). The CAI has held on to this goal throughout its development, although at times concessions had to be made to react to challenging situations. An example for this was the energy price crisis in 2022, where OurPower created an option for its producers to sell only part of their electricity via the peer-to-peer marketplace and the rest on the open market, where very high prices could be achieved during this time (OP01, OP02).

In addition to its core business, the online marketplace, the initiative supports citizens who want to establish their own energy communities and organizes information and awareness building activities around renewable energy and the Austrian energy system. Finally, OurPower acts as a practice partner in different research projects to create new knowledge on the topics of community and citizen energy. This active contribution to research and knowledge production was not originally planned as a core feature of the initiative, but evolved as a reaction to challenges during the Covid-19 pandemic (OP01, OP03). The recruitment of new users for OurPower's marketplace was slowed down significantly by Covid-19 measures, which resulted in the initiative looking for alternative ways of raising funds. Participation in research projects, although initially only a stopgap solution, has since become a major asset to the initiative.

Relation to issue of sustainability and climate change

OurPower's founding members have long-standing experience working on the topic of Austria's energy transition. The promotion of this transition through citizen participation is at the heart of the initiative, however, the topics of sustainability and climate change are not necessarily always at the forefront of its communication and activities. Instead, OurPower focuses on narratives of self-sufficiency, independence, citizen empowerment and regionality, which are topics that receive more positive feedback from its clients than issues of sustainability and climate change mitigation (OP02). The latter are often perceived as too broad and intangible: "Some of these terms are very abstract. Something like energy transition or sustainability, we have recently heard again that this is difficult for people to grasp" (OP02, pos. 25). The initiative also aims to contribute to the energy transition by increasing public knowledge and awareness regarding the Austrian energy system, as lack of awareness is perceived as a major barrier to both renewable energy expansion and citizen participation.

Members of OurPower's core team and managing board emphasize the initiative's pioneering role with regard to community energy through the establishment of its online peer-to-peer marketplace, a model of energy sharing that was not previously available in Austria. At the time of OurPower's foundation in 2018, there was still no legal framework for citizen and community energy in Austria, although the establishment of energy communities through the 2021 Renewables Expansion Act was already under development. The initiative therefore sought to implement their vision of community energy under the existing legal conditions, aiming to provide an example to policy makers of how citizen participation in the energy system could be implemented: "We were simply pioneers. You just have to say that. We tried to implement this basic idea of energy sharing and citizen power within the existing legal framework" (OP01, pos. 9). OurPower's activities to raise public awareness of and knowledge about the electricity market and renewable energy are seen as another key contribution to Austria's energy transition: "I would see it as our role to raise people's awareness of energy, of electricity consumption, that it's not just something that comes out of the socket and that I can use to cook my soup, but that there's also something behind it without being too technical and overburdening people with it" (OP02, pos. 32).

Niche characteristics

The initiative took on a pioneering role nationally, as there was previously no comparable model that enabled the direct trading of energy between citizens. By acquiring external funding from different sources (such as subsidies for startups and funding through research projects), the CAI fulfills a shielding function that allows for experimentation with new models of energy sharing that are not (yet) viable in the established energy system. Even more so, as the initiative pursues the vision of actively involving citizens in energy transition and promoting energy citizenship, it focuses on empowering functions.

OurPower perceives its model as an alternative to the present energy system with its global interconnections, price volatility and disconnect from regional players. The CAI sees its role in increasing awareness of the energy system, creating relationships between energy producers and consumers, and providing spaces for discussions around fair and stable energy prices. Increasingly, OurPower also aims to raise diversity among the actors participating in the energy system: “Our goal is actually to become a bit more diverse in our community. Not just our cooperative, but also our customers, that would be very nice” (OP02, pos 40). This development is mirrored in the evolution of its core team over the years: While the majority of the founding members were over 50 years old, many younger colleagues in the age range of 25-35 have joined the core team since 2022. This has had an impact in particular on the initiative’s communication strategies and core audiences: “I see the difference above all in our external communication, that we have become younger and more dynamic and are simply trying out more than before” (OP02, pos. 40). This increasing focus on inclusion of underrepresented groups in terms of age, gender and experience with participatory formats is also reflected in the CAI’s textual outputs (see section 5.1.2).

5.1.2 Textual Analysis

5.1.2.1 *Documentation of application of the method*

The corpus for the in-depth textual analysis comprises 23 texts and focuses on the CAI’s perspective. The majority of texts analyzed are authored by (actors from) the CAI, with formats including OurPower’s statute and annual reports, PR materials and blog articles. Two media articles have also been included, but so far there is little information available from the media on the initiative, and this perspective is therefore underrepresented in the corpus. Five additional documents were initially collected to shed light on the CAI’s context and regime perspectives. However, due to their large size and comparatively small amounts of relevant information for the case, these texts were excluded from in-depth analysis and were only used as references for specific information. Similarly, scientific literature is only available on the larger context of the Austrian energy system rather than the initiative, specifically, and was therefore excluded from in-depth analysis.

Qualitative content analysis was conducted in MAXQDA 24.7.0 and encompasses 51 codes, integrating analytical dimensions and categories from all methodological approaches to ensure that no relevant information was missed. In addition to the results of the textual analysis outlined below, the analysis generated much information on the CAI’s stakeholder network and relationships with key actors as well as on system dynamics and niche-regime-interactions, all of which will be discussed in the methods’ respective sections.

5.1.2.2 *Results*

Meta-data



As the text corpus focuses primarily on documents published by the CAI itself, niche voices are dominant and voices from the regime are almost entirely absent. Texts were mostly authored by OurPower's management board and employees; thus, other members of the CAI are underrepresented in the sample. While OurPower's annual reports mainly address its members, the blog posts are directed at a broader audience of members as well as the general public. Three of the texts also address policy makers, though only one of them directly, where the CAI's management board gives their perspective on Austria's Renewables Expansion Act (Erneuerbaren-Ausbau-Gesetz EAG, BGBl. I Nr. 150/2021) implementing a legal framework for citizen energy communities. While scientific actors are frequently mentioned as key partners for OurPower's activities, they are not addressed directly in the analyzed texts, nor do they speak actively.

Geographically, the CAI focuses on the Austrian national and regional context, as is also evident by the use of German throughout its texts. At the same time, the European context plays an important role in some of OurPower's narratives and is also frequently referenced with regard to EU-level policies and the CAI's relationships with other international (niche) actors. In the Austrian context, topics of (regional) energy production and energy prices have been fairly prominent in the public discourse in recent years, mainly due to the turbulent ups and downs of energy prices since 2022 as a result of the Russo-Ukrainian war. In addition, the 2021 Renewables Expansion Act updated Austria's incentives scheme for renewable energy (REN) production and introduced a legal framework for (renewable) energy communities, which created more public interest for OurPower's key topics of REN expansion and citizen participation in the energy system.

Manifest content

Topics discussed in the text corpus can be categorized according to the three MLP levels. At the landscape level, the texts written by the CAI itself discuss the Russo-Ukrainian war and Austria's natural gas imports from Russia, international power shifts in 2022, shifting legal and economic conditions in the energy sector, the rapid dynamics of the electricity market, and the overall trend toward decentralized renewables. Narratives at landscape level focus on climate emergency and climate change, the energy transition, market volatility, and the urgent need for action.

At the regime level, EU directives and Austria's Renewables Expansion Act are discussed as essential policy shifts. Participation in EU research projects and recognition through public awards have been crucial for the CAI. Other developments at the regime level include the national rollout of smart meters by grid operators to improve the availability of energy data, the Austrian energy industry's overall situation, stock exchange trends, and activities of national energy providers.

At the niche level, since its foundation the CAI has consistently pursued a clear call to action towards citizens to actively participate in the energy transition by becoming a member of OurPower and participating in its peer-to-peer marketplace for renewable electricity. However, the thematic focus has evolved. Initially centered around citizen participation and the OurPower marketplace, the discourse has shifted over time to emphasize crises such as the Russo-Ukrainian war, the energy price crisis, and Covid-19. Simultaneously, the emphasis on the need for the transition to a stable, regional, and decentralized energy system as a reaction to the multiple (global) crises has intensified. Since 2021, the initiative has developed an additional narrative that focuses on its "family and friends" price scheme which allows electricity producers to sell electricity to specific people at a discounted price. Since 2022, the CAI increasingly addresses topics of diversity and inclusion with regard to citizen participation in the energy

sector, aiming to engage underrepresented groups such as women and youth, since a lack of diversity in participatory formats such as energy communities has been identified as one of the key challenges in fully realizing the potential of citizen participation for fostering energy transitions (Neij et al. 2025).

Texts produced by the CAI consistently emphasize the topics of citizen power, the need for a democratized energy economy, and the opportunities presented by digitalization and decentralization. In the initial phase, OurPower focused on the new peer-to-peer marketplace, citizen participation and empowerment, as well as the urgency of climate protection. 2021 brought increased political recognition for these topics through the Renewables Expansion Act (EAG), greater media presence, and saw active participation of OurPower in political debates, with texts specifically addressing policy makers and commenting on the new law. In 2022, the onset of the Russo-Ukrainian war and the energy price crisis reinforced the emphasis on stability, regional energy supply, and a solidarity-based energy economy. Since then, the CAI has been focusing on strengthening internal structures, expanding digital innovations, and developing a long-term strategic approach to sustainable and fair energy pricing.

Latent content

The texts produced by the CAI highlight both positive and negative influences shaping its development. On the positive side, key themes include citizen power, citizen action and citizen energy, self-generation of electricity, transparency, stable and fair energy prices, and the establishment of a peer-to-peer marketplace. In contrast, external and landscape factors such as the war in Ukraine, the energy price crisis and the effects of Covid-19 were mostly framed as barriers and challenges to OurPower's development. At the same time, these external crises highlighted the regime-level issues addressed by the initiative, such as Austria's continued dependency on energy imports, the volatility of global energy markets and the need for an expansion of renewable energy production. This was leveraged by the initiative to underscore the importance of their goals and the ways in which OurPower's activities could contribute to them. Notably, professionals from the organization aim to actively contribute to the public and political discourse around these topics through some of the blog posts.

Over time, the texts increasingly reflect on broader landscape-level themes. The CAI itself has become more visible since 2021, particularly in connection with the Renewables Expansion Act (EAG) which created a legal framework for energy communities. In the beginning, the texts focused primarily on the promotion of economic and social activities in the fields of climate protection and energy, fostering a democratic foundation for collective self-sufficiency, advancing the energy transition, and global climate protection. This includes replacing fossil fuels and inefficient resource use with renewable energy, energy efficiency, and cooperative economic models. The present discourse has expanded to highlight the impacts of Covid-19, the energy crisis, and the Russo-Ukrainian war, while continuing to emphasize key themes such as citizen power, citizen-produced electricity and transparency in the energy system. The CAI's commitment to fair and long-term stable electricity prices only became a priority in response to the energy crisis. Similarly, the focus on regionality has gained importance primarily since the onset of the Russo-Ukrainian war.

Methodological reflections

The analyzed texts stem from a relatively young initiative, with a moderately good data situation where the focus is on texts produced by the CAI itself, with only a few media texts available so far. The corpus is somewhat one-sided due to the limited variety of voices present. CAI members themselves rarely have a

chance to speak in the texts, making their perspectives largely absent from the discourse. Additionally, it was often unclear who the intended addressees of the texts were, and calls to action were not always explicitly formulated.

5.1.3 Social Network Analysis

5.1.3.1 Documentation of application of the method

The social network analysis builds directly on the stakeholder analysis documented in Deliverable 1.2. In a first step, the information collected there on OurPower's key stakeholders (type, power, interest, impact) was transferred to a kumu.io project to support visualization. For the second step, additional information was collected through the interviews and textual analysis (see sections 5.1.1 and 5.1.2) focusing on the stakeholders' role in the context of the initiative, their resources to influence the policy process, and the MLP level they can be assigned to. In addition, the preliminary visualization of the stakeholder network based on the first interview (OP01) was discussed with two further interview partners (OP02 and OP03) to elicit further information on the key stakeholders.

A full list of stakeholders (SHs), their characteristics and key relationships between them can be found in the appendix (section 9).

5.1.3.2 Results

The results of the social network mapping for OurPower are shown in figure 5.1.1.

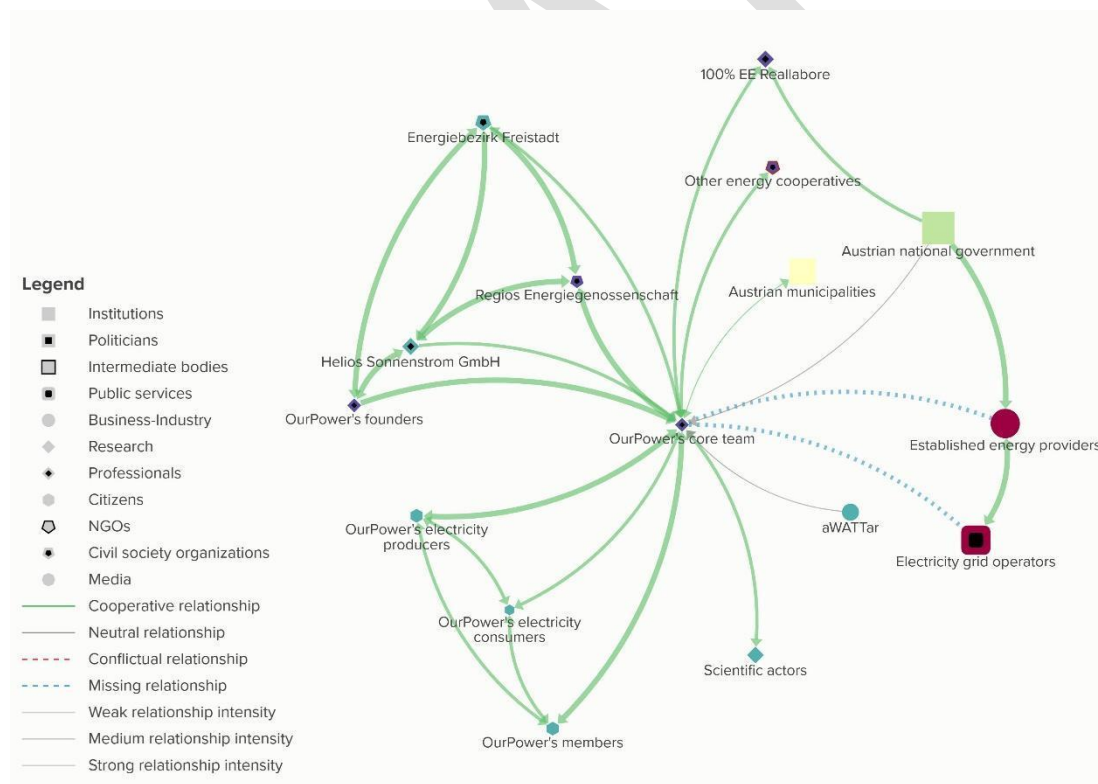


Figure 5.1.1: Social network mapping for OurPower

At the niche level, the social network surrounding OurPower mainly dates back to the early 2000s, when the nonprofit organization Energiebezirk Freistadt ("energy district Freistadt") (SH6) was founded with the

goal of supporting projects in the areas of renewable energy, sustainable mobility, climate mitigation and adaptation. Through their long-standing experience with these topics and the regional connections the organization managed to form over the years, Energiebezirk Freistadt as well as their subsidiary Helios Sonnenstrom GmbH (SH7) became key partners during the foundation phase of OurPower, and the initiatives still maintain strong cooperative relationships. In 2024 the Energiebezirk even founded its own energy cooperative, Regios Energiegenossenschaft (SH16), which continues to work closely with OurPower. The CAI also maintains close ties with other European energy cooperatives (SH9), supporting each other through the exchange of knowledge as well as sharing contacts and networks. Similarly, there is knowledge exchange with the initiative 100% EE Reallabore (“100% renewable energy real laboratories”) (SH8), which is funded by the Austrian government to foster the development of integrated, regional sustainable energy systems.

It is notable that the majority of actors at the niche level are professionals or civil society organizations who hold mainly relational and knowledge resources. Although their interest in the policy processes surrounding Austria’s energy transition is very high, they are not formally involved in the policy-making process and mainly aim to contribute to the transition by offering citizens alternative models of energy production and consumption, thus taking on a pioneering role and creating examples of best practice.

In contrast to these professional and organizational stakeholders, many of OurPower’s electricity producers and consumers as well as their members are citizens with comparatively lower interest and power to influence national or regional energy policies. They can, however, support niche initiatives such as OurPower with economic resources, by deciding to sell or buy their electricity through OurPower’s marketplace. Strong supportive relationships with its members, producers and consumers are especially important to OurPower, as the initiative continuously seeks feedback from its members to improve its services and approaches. Additionally, OurPower aims to create relationships between electricity producers and consumers through its direct marketing approach, since the initiative considers active citizen engagement with the topic of renewable energy to be a key factor in supporting Austria’s energy transition.

Normative power to influence the policy regime is mainly held by actors **at the regime level**. The most powerful stakeholders in the regime are the Austrian national government (SH10), who is directly involved in the policy process, as well as Austria’s established energy providers (SH13) and electricity grid operators (SH14). While not formally involved in the policy process, the latter two groups nevertheless hold considerable power to influence the (policy) regime since they possess key resources and important relationships in the energy system. Established energy providers have more economic resources compared to niche initiatives, which potentially allows them to offer better financial conditions to both electricity producers and consumers, as was the case in Austria during the energy price crisis. Additionally, they have more relational resources, as evidenced by their strong supportive relationships with both the electricity grid operators and actors from the policy regime. These close ties can result in greater regime-level support for established energy providers, as shown for example by the financial support for Wien Energie (Vienna’s municipal energy provider) by the national government when the provider was threatened by bankruptcy in 2022, which a niche initiative in the same situation would likely not have received. Electricity grid operators, on the other hand, have power over the energy distribution infrastructure and, owing to their closer ties to regime-level stakeholders, have incentives to support established energy providers over niche initiatives. A lack of support for niche initiatives can be seen e.g. in the slow roll-out of smart meters

by the electricity grid operators, which are currently a technical prerequisite for citizen energy communities and thus create a barrier for the expansion of citizen participation in the energy system.

Supportive stakeholders at the regime level include scientific actors (SH12), who can provide moral resources and important knowledge for niche initiatives and, in the case of OurPower, even contribute financial resources, as the CAI partly finances itself through participation in research projects. Austrian municipalities also constitute potential cooperative partners for OurPower, as they can provide recognition, financing and access to their social networks if they choose to collaborate with the initiative; however, this is dependent on municipal actors showing an interest in such a collaboration. Finally, another key relationship exists between OurPower and aWATTar (SH15), an established energy provider that is itself committed to the promotion of renewable energy and undertakes OurPower's energy accounting, i.e. acts as a gateway to the established energy system. While this relationship is not conflictual, it is characterized by power imbalance, as OurPower is dependent on the cultural and socio-organizational resources provided by aWATTar.

The majority of **niche-regime interactions** are marked by such imbalances, with niche initiatives such as OurPower or 100% EE Reallabore dependent on funding from the regime level while having few opportunities to directly interact with and influence the policy process on a national level. Other relationships with key regime actors are simply missing, such as between the CAI and established energy providers or electricity grid operators. While OurPower has certainly benefited from its close ties with actors from the science regime due to knowledge gains and additional funding, these scientific actors are themselves not directly involved in the policy process and, therefore, cannot confer influence over it.

In keeping with these niche-regime dynamics, the policy shift towards more citizen participation in the energy system that was brought about by the establishment of energy communities through Austria's 2021 Renewables Expansion is largely attributed to developments at the landscape level rather than to activities at the niche level. The window of opportunity for this policy change was facilitated mainly by increasing trends towards decentralized energy production and citizen involvement, which led to the development of the 2019 EU Clean Energy for all Europeans package (specifically, the Renewable Energy Directive/EU/2018/2001 and the Internal electricity market Directive/EU/2019/944) that mandated the introduction of national laws toward citizen participation.

Nevertheless, OurPower and other niche initiatives in its network see important contributions to these regime-level developments through their activities. By implementing and testing new, innovative solutions for community and citizen energy – both on a technical and social level – they act as pioneers, providing proof of concept and best practice examples that can help garner support for policy innovation among incumbent actors who are frequently wary of change. In their activities, most niche initiatives target the Business & Industry and the Cultural regime: They aim to provide alternatives to established energy providers with more focus on topics of regionality and solidarity, and strive to change societal norms and expectations regarding the energy system through knowledge and awareness raising. This can potentially feed into the aforementioned long-term developments and trends on the landscape level, e.g. towards more decentralized and independent energy production, citizen participation and engagement, thus contributing indirectly to policy changes at the regime level.

5.1.4 System Mapping

5.1.4.1 Documentation of application of the method

Most of the information needed for the system mapping of the niche dynamics could be collected through interviews (5.1.1) and TA (5.1.2). The regime dynamics were mapped based on perspectives from both the CAI itself (through TA and interviews) as well as regime actors (through an interview with an expert on the Austrian energy system (OP05) and information collected from policy documents and regime-level publications).

In a first step, the dynamics on both the regime and the niche level were described in a narrative form based on the insights from document and interview analysis. Following this, the key dynamics were further explored through additional data sources where necessary (and available), and the most important variables involved in the dynamics were identified, with graphs illustrating their development over time. These variables were then connected to build causal loop diagrams (CLDs) on both the niche and the regime level. In a final step, causal loops driving the dynamics on both levels were identified and connections between niche and regime level developments were explored.

5.1.4.2 Results

Regime level

Regime level issue that led to niche development(s):

Austria has to implement a rapid expansion of its domestic renewable energy production to meet its goal of covering 100% of total domestic power consumption with renewable electricity by 2030 (BMK 2024).

Pattern(s) of key factor(s) at regime level:

Pattern A: Expansion of renewable electricity production

Figure 5.1.2 shows the development of Austria's renewable electricity production from 2005-2022. Austria has been able to expand its renewable electricity production over time, but the expansion is slow and total power consumption has been increasing as well. To reach its goals for 2030 (increase in yearly renewable electricity production by 27 TWh) and 2040 (climate neutrality in Austria), the rate of expansion will have to increase significantly (BMK 2021).

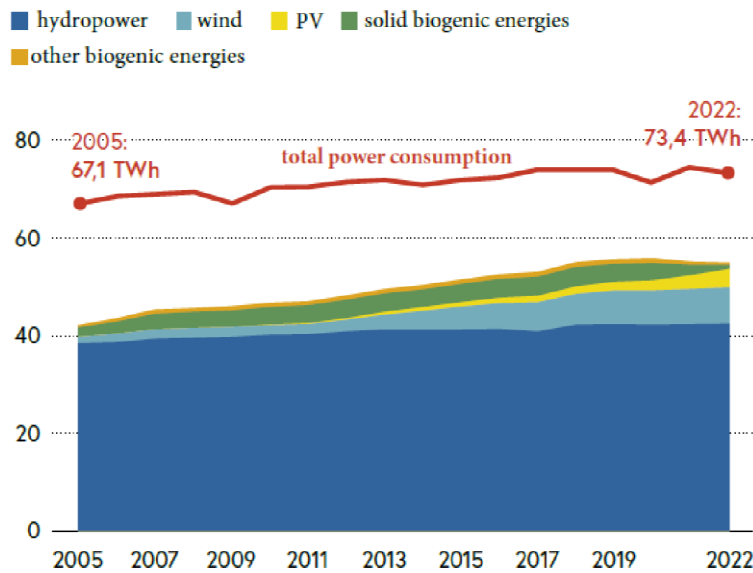


Figure 5.1.2: Renewable electricity 2005 – 2022 relative to total electricity consumption in TWh (Source: BMK 2024, own translation)

The developments have been strongly influenced by legislation to support REN. Notably, in 2000, the first quantitative goals for renewable electricity were established in the energy liberalization law (Energieliberalisierungsgesetz, BGBl. I Nr. 121/2000). A nationally uniform basis for the promotion of renewables via minimum feed-in tariffs and subsidies was established through the 2002 Green Electricity Act (Ökostromgesetz, BGBl. I Nr. 149/2002). This led to a first “boom” in the expansion of wind and biogenic energy production, in particular, while hydropower was already close to maximum capacity at this point and solar power was still perceived as too expensive (OP05). This first expansion was halted by an amendment of the policy in 2006, which strongly deteriorated the conditions for REN expansion (OP05). The expansion of wind energy picked up again around 2012 (OP05), when a new version of the Green Electricity Act was introduced (Ökostromgesetz 2012, BGBl. I Nr. 75/2011) which implemented a significant increase in the total amount of subsidies available for the installation of REN production facilities (BMWFJ, 2012). Solar energy, on the other hand, had long been lagging behind due to its high costs and only experienced a boom after Austria implemented its new Renewables Expansion Act (Erneuerbaren-Ausbau-Gesetz EAG, BGBl. I Nr. 150/2021) and an amendment to the Electricity Management and Organization Act (EIWOG), which introduced a new system of subsidies focusing on market premiums as well as investment subsidies (BMK 2021). The availability of subsidies, coupled with the explosion of electricity prices in 2022 due to the start of the Russo-Ukrainian war, led to a large expansion of solar PV within a very short timeframe (OP05). However, this trend seems to have calmed down as energy prices have settled again.

Pattern B: Public support for renewable energy

Going back to the 20th century and the early 2000s, Austria has always been very proud of its large hydropower production, which has sometimes seemed like a given, as the process of its expansion dates back to the late 1940s (I05). Other REN technologies have long been perceived as prohibitively expensive; however, this discourse has changed along with changes in tariffs and subsidies as well as technological improvements (I05). Acceptance of renewable energy production facilities varies greatly across Austria,

but it can be observed that it is often greater where wind or PV have already been installed, while resistance is strong where there are no production facilities yet (105).

Figure 5.1.3 illustrates the development of public support for different types of REN over the past ten years, based on a recurring survey on the state of REN in Austria.

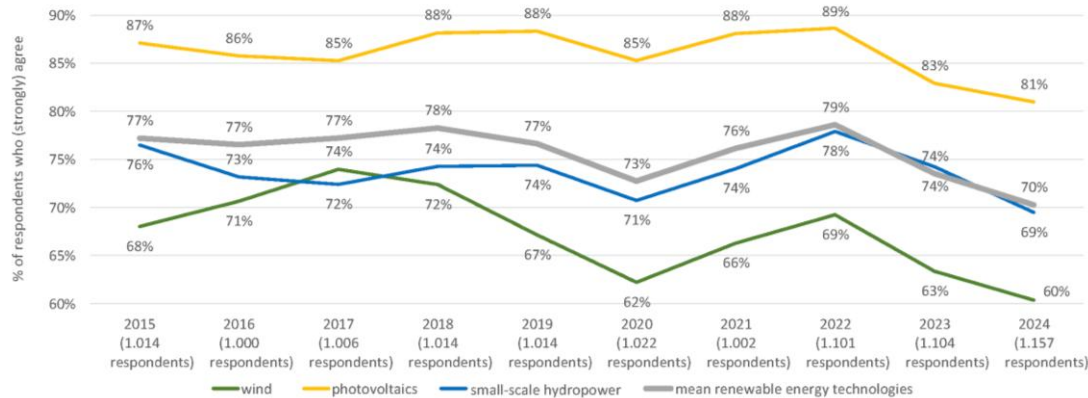


Figure 5.1.3: Development of approval for a renewable energy project in (near) the municipality, 2015-2024 (Source: Hampl et al. 2025)

Pattern C: Citizen participation in the energy system

Austria has a long tradition of citizen involvement in energy supply, beginning in the early 20th century with rural electricity cooperatives, some of which harnessed local hydropower (Brazda 2023). However, reliable data on the extent of citizen participation in the energy system tends to be more recent, as a legal basis for participation was introduced only recently through Austria's Renewables Expansion Act (BMK 2021). Through the format of energy communities, citizens can now communally produce, consume, store and sell (renewable) energy (Fischer et al. 2024). Since their introduction, the number of energy communities has been rising almost exponentially, and although barriers and challenges remain during the process of initial foundation, the format is considered a success so far (Fischer et al. 2024).

Despite these promising numbers, a large percentage of the Austrian population remain unaware of opportunities to become involved in the production of renewable energy. Figure 5.1.4 shows the percentage of respondents from an annual survey on the state of REN in Austria who are currently, or have previously been, financially involved in a citizen participation project on REN, compared to the percentage of those who have never heard of these types of projects.

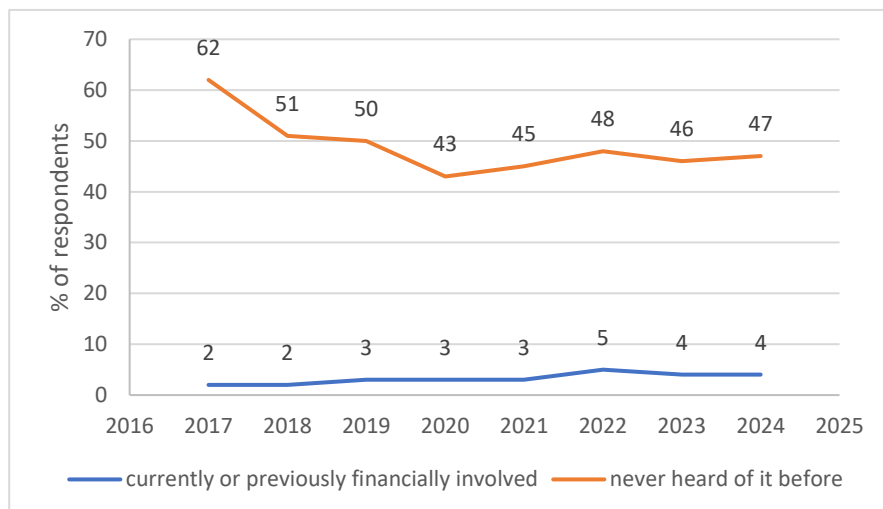


Figure 5.1.4: Citizens' involvement in participatory REN projects, 2017-2024 (adapted from Hampl et al. 2025)

While the percentage of people who have never heard of citizen participation projects in renewable energy before has decreased noticeably since 2017, the percentage of those who have been or are currently involved in such a project has only risen slightly. Possible reasons for knowing about the opportunities, but not participating, could be due to financial constraints, lack of availability nearby or the perceived greater administrative effort involved in participation (OP04, OP05).

Dynamics at regime level

Figure 5.1.5 shows the CLD of the regime level dynamics for this CAI. The left side of the CLD expresses the relationship between renewable electricity production and public support for renewable energy. Expansion of REN production is dependent on public support for REN, because lack of public support is a severe barrier to the construction of new REN production facilities. In addition, a lack of public support will weaken the political commitment to renewables and thus delay legislation to support REN, which is another crucial enabling factor for the expansion of Austria's renewable electricity production, as past developments have shown. Public support can be increased through information and awareness building by regime actors, but this requires a certain given amount of political commitment to REN to initiate these kinds of activities (R1). Additionally, and more importantly, public support can be increased through direct participation of citizens in the energy system, as this increases trust, understanding of the system's functioning and feelings of empowerment (Neji et al. 2025). It can also change societal expectations regarding the convenience of energy production and consumption (OP01, OP02, OP03). By changing expectations regarding the convenience of energy production and consumption, these world views which constitute important barriers to REN expansion (Sposato & Hampl 2018) can be dismantled. At the same time, citizen participation in the form of (communal) production of renewable electricity by citizens themselves directly increases Austria's renewable electricity production, although the contribution is currently small.

The right side of the CLD further explores the factors influencing citizen participation in the energy system. Similar to renewable electricity production, citizen participation requires favorable legal conditions as well as public support, without which citizens are unlikely to take part in opportunities for participation. Support can be increased through information and awareness building, but may be inhibited by high

societal expectations regarding the energy system's convenience, as participation will usually incur additional efforts (e.g. in terms of time, money or cognitive capacities) (OP05). Political commitment to citizen participation enables support through legislation and awareness building, but is itself dependent on existing public support for these activities.

In addition, political commitment may be curtailed by pushbacks from established actors in the energy system, if there is resistance to citizen participation and these actors are powerful enough to influence policy making (OP01, OP03, OP05). While resistance can be counteracted through information and awareness building (analogous to public opposition), the power issue can be addressed through the expansion of citizen participation itself, as it empowers citizens to play a greater role in the energy system compared to established actors (OP01, OP03).

CLD of regime level dynamics

Link to CLD in kumu: <https://kumu.io/janap/cosustain-sm-ourpower#ourpower-regime-dynamics>

Alternative link: <https://embed.kumu.io/a87612edf60fbbc23fe01455df26b807>

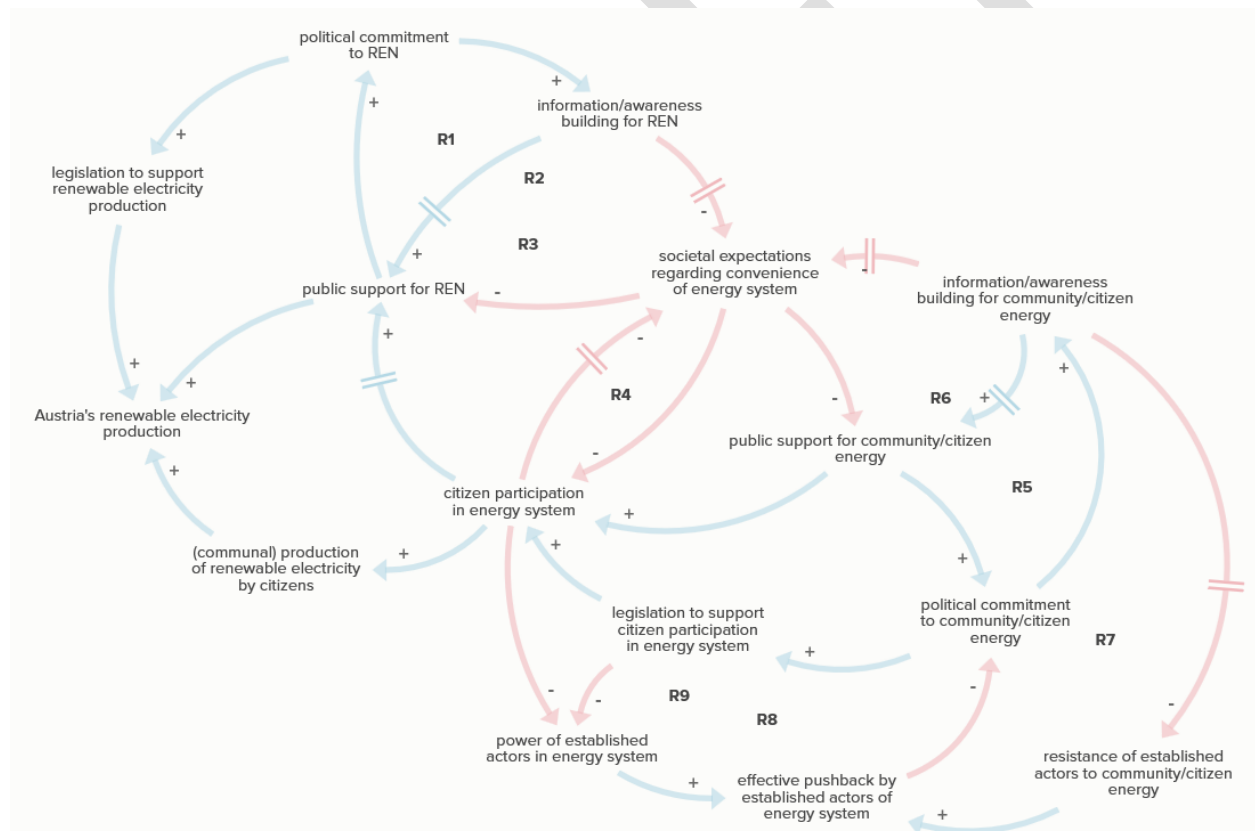


Figure 5.1.5: CLD of regime level system dynamics

Feedback loops:

R1: political commitment to REN →+ information/awareness building for REN →+ public support for REN →+

R2: political commitment to REN →+ information/awareness building for REN →- societal expectations regarding convenience of energy system →- public support for REN →+

R3: political commitment to REN →+ information/awareness building for REN →- societal expectations regarding convenience of energy system →- citizen participation in energy system →+ public support for REN →+

R4: societal expectations regarding convenience of energy system →- citizen participation in energy system →-

R5: political commitment to community/citizen energy →+ information/awareness building for community/citizen energy →+ public support for community/citizen energy →+

R6: political commitment to community/citizen energy →+ information/awareness building for community/citizen energy →- societal expectations regarding convenience of energy system →- public support for community/citizen energy →+

R7: political commitment to community/citizen energy →+ information/awareness building for community/citizen energy →- resistance of established actors to community/citizen energy →+ effective pushback by established actors of energy system →-

R8: political commitment to community/citizen energy →+ legislation to support citizen participation in energy system →- power of established actors in energy system →+ effective pushback by established actors of energy system →-

R9: political commitment to community/citizen energy →+ legislation to support citizen participation in energy system →+ citizen participation in energy system →- power of established actors in energy system →+ effective pushback by established actors of energy system →-

Interestingly, all loops in the system are reinforcing, which should – in theory – allow for unhindered “growth” of the desired factors once the positive feedback-loops have been activated at any point of the system. However, this unimpeded “growth” may be hindered by the time delays that typically occur with regard to changes in public opinion and societal expectations, as these are usually very slow processes. Since continued efforts to increase public support for REN and citizen participation in the energy system are themselves dependent – through the mitigating factor of political commitment – on positive public support for these subjects, this may significantly slow down or even reverse any positive dynamics, if e.g. public support is negatively impacted by external factors.

Therefore, it becomes relevant that niche initiatives are able to interfere at certain points of the system, such as by directly increasing citizen participation through offered participatory activities or by implementing information and awareness building activities on REN and citizen participation. If regime-level support for such niche initiatives could be increased proportionately to a decrease in regime-level or public support for the initiatives’ activities, this could create a balancing feedback loop.

Niche level



Initiative goal:

OurPower's main goal is to increase citizen participation in the Austrian energy system, which the initiative assumes to be a key factor in the transition to sustainable production and consumption of renewable electricity.

Pattern(s) of key factor(s) at niche level

Pattern A: Number of OurPower's electricity producers and consumers

User numbers are an important variable for the CAI, as its core business model consists of users selling and buying energy through OurPower's peer-to-peer online marketplace. More users generate more revenue for the initiative, help spread information on its activities and allow OurPower to continuously improve its services through user feedback (OP01, OP02).

Figure 5.1.6 shows the development of OurPower's user figures from 2021 to the end of 2023 (the only timespan for which numbers could be gathered from OurPower's annual reports). A general trend of slow but consistent growth was interrupted, at the beginning of 2022, by the onset of the Russo-Ukrainian war and the resulting electricity price shocks (OP01, OP02). OurPower lost electricity consumers during this time because larger energy providers were able to offer more competitive prices (OP01). The decrease in producers' numbers was less pronounced, since OurPower developed an offer that allowed producers to sell part of their electricity on the open market, profiting from the higher prices there (OP01, OP02).

Since electricity prices have stabilized again, the trend of slow but steady growth in user numbers is expected to continue (OP01, OP02, OP03). The CAI attributes the slow pace of growth to the current lack of public interest and awareness in renewable electricity and community energy, as well as external events that have shifted public attention away from OurPower's key themes of sustainable energy production and citizen engagement in the energy system in recent years (OP01, OP03). Additionally, the interviewees mentioned societal norms and expectations regarding the convenience of the energy system or the acceptable price for electricity as factors impeding a more rapid growth (OP01, OP02). The initiative's measures for user recruitment include marketing activities to raise its brand awareness, information and awareness building activities on the topics of REN and community energy, as well as improving the quality of their services by incorporating user feedback and keeping close relationships with their users (OP02).

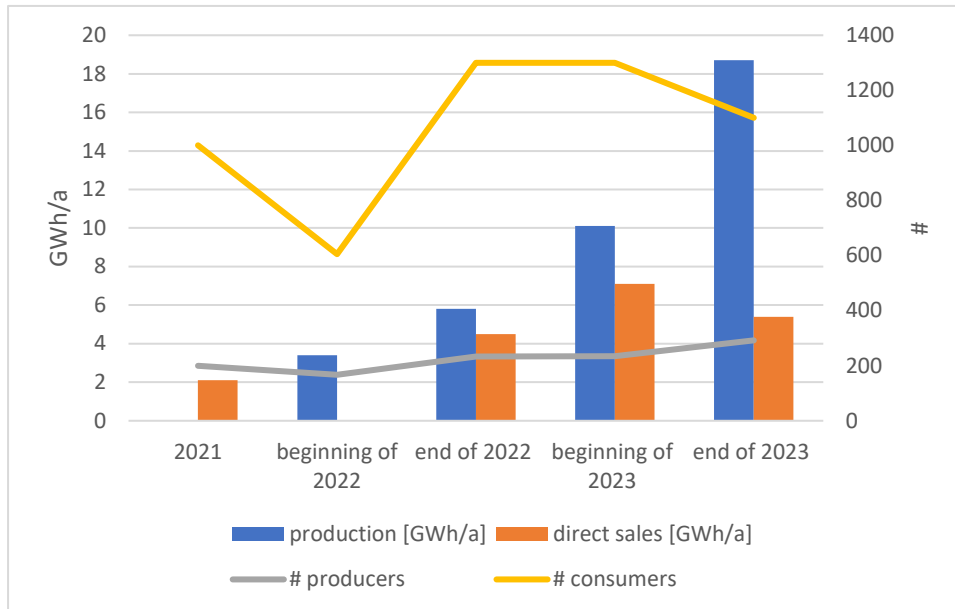


Figure 5.1.6: Development of OurPower's user numbers, electricity production and consumption, 2021-2023 (Sources: OurPower 2022, 2023, 2024)

Pattern B: Electricity production and consumption of OurPower's users

While user numbers are relevant especially with regard to increasing OurPower's prominence in the broader public via word of mouth and receiving feedback to improve its services, the income generated through its core business in fact depends on the amount of electricity traded through the initiative's online marketplace. Figure 5.1.6 also shows the amount of electricity produced by OurPower's producers, as well as the amount of electricity traded via direct sales through the marketplace. As the figure illustrates, while the total amount of electricity produced increases with the number of producers, this is not necessarily the case for direct sales, which in fact decreased at the end of 2023. This can happen when electricity prices on the open market are higher than those achieved on OurPower's marketplace, as producers will then increasingly opt to sell their energy on the open market instead. This challenging dynamic underscores the difficulties faced by niche initiatives attempting to offer alternative ways of producing and consuming energy, while at the same time remaining embedded in a global energy market.

Pattern C: OurPower's membership numbers and available capital

As Ourpower is a cooperative of energy producers, membership is mandatory for those who want to sell their electricity through the online marketplace, while it is optional for users who just want to buy electricity through OurPower. Figure 5.1.7 shows the development of OurPower's membership numbers and share capital since its foundation at the end of 2018. Membership numbers are influenced by the same factors impacting user numbers (level of public interest/awareness of REN and community energy, awareness of OurPower's offers, societal norms and expectations), though they are additionally limited to citizens who have the financial means and space to produce their own renewable electricity, which can be more difficult e.g. in an urban setting.

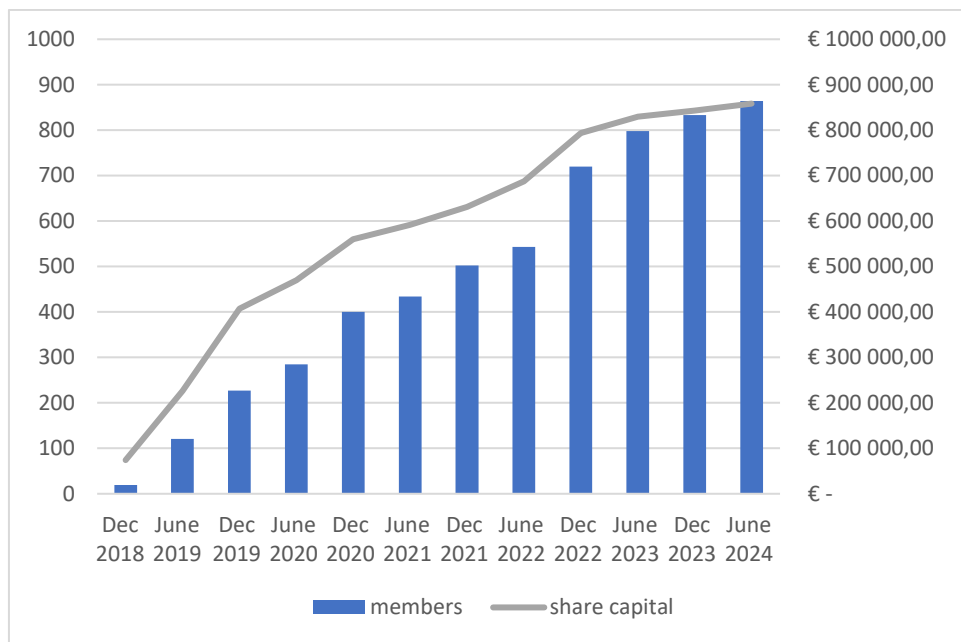


Figure 5.1.7: Development of OurPower's membership numbers and share capital, 2018-2024 (Sources: OurPower 2019, 2020, 2021, 2022, 2023, 2024)

Dynamics at niche level

Figure 5.1.8 shows the CLD of OurPower's niche level dynamics. As a (not-for-profit) business, OurPower's activities depend on the capital or funds available to them. The cooperative's capital is contributed by its members, which includes all electricity producers wanting to sell their energy on the marketplace, as membership is mandatory for producers (but not consumers). Additionally, OurPower generates revenue from the amount of electricity traded through the marketplace, meaning that an increase in the number of marketplace users (producers and consumers) leads to more available funds. The successful recruitment of new users is dependent on public awareness of OurPower's activities, which can be increased through word of mouth by current users, although this effect has a certain time delay. As time passes, greater public awareness can itself be expected to increase word of mouth, but this is a slow process considering OurPower's relatively recent foundation. The cooperative tries to increase positive word of mouth by continuously working on improving the quality of their services (i.e. the marketplace and other services they offer). To this end, OurPower collects feedback from its users, which increases with the number of people using their services and allows for an increase in user satisfaction when implemented. Additionally, public awareness of OurPower's activities can be increased through marketing activities.

User numbers are further influenced by public perceptions of the importance of renewable electricity generation, on the one hand, and citizen participation in the production and consumption of energy, on the other hand. When support for REN and community/citizen energy are low (which can also happen when other issues are more prominent on the public agenda, such as a health crisis), fewer people are interested in the cooperative's activities and services. Therefore, OurPower implements different types of information and awareness building activities around these topics, such as community dialogs, workshops and (online) talks around renewable citizen power. These activities can increase public support for the initiative's topics (which is also one of OurPower's explicit goals), but as is often the case with changes in

public perceptions, these effects can have a significant time delay. Information and awareness building also contribute to changing societal expectations regarding the convenience of energy systems, which can be a large impediment to the expansion of OurPower's user numbers. When other energy providers or commercial consumers are perceived to offer more convenient services compared to OurPower's marketplace (e.g. because prices are lower or subject to fewer changes, or billing is perceived as more convenient), this can decrease the number of people willing to use OurPower's services.

As many of OurPower's activities have time-delayed impacts on user numbers, and growth has therefore been relatively slow, another key activity is the acquisition of external funding, which OurPower has been implementing e.g. by acting as a practice partner in research projects around community and citizen energy.

CLD of niche level dynamics

Link to CLD in kumu: <https://kumu.io/janap/cosustain-sm-ourpower#ourpower-niche-dynamics>

Alternative link: <https://embed.kumu.io/a18b4863bd8c7fa055eaba0c43e0ea9d>

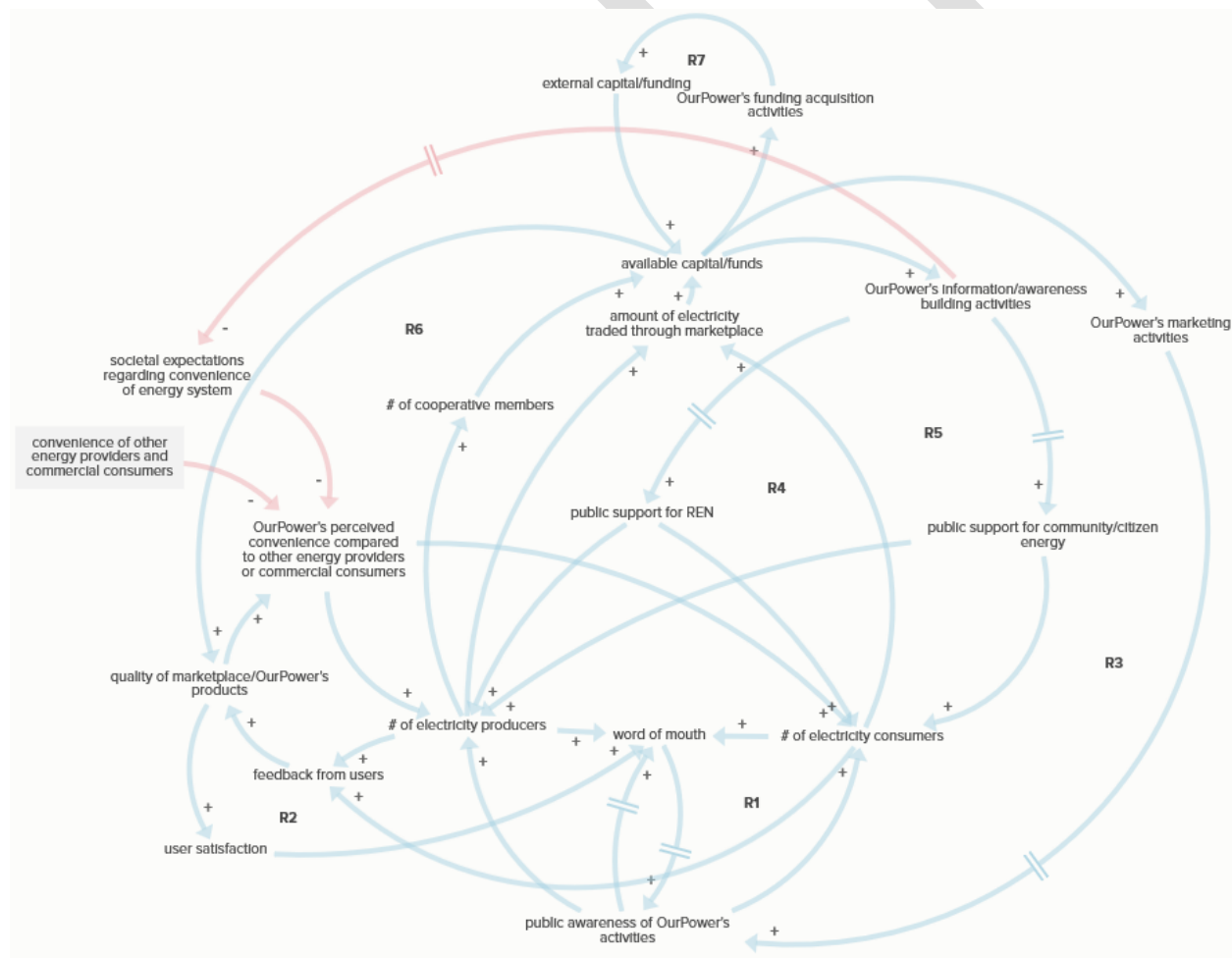


Figure 5.1.8: CLD of niche level system dynamics

Feedback loops:



Note on loops: There are many more loops in the CLD than have been marked, because factors are strongly interconnected. The ones spelled out below were chosen because they illustrate the key dynamics, which then interact and reinforce each other further through certain factors that link them together.

R1: # of electricity consumers (analogous path through # of electricity producers) →+ word of mouth →+ public awareness of OurPower's activities →+

R2: # of electricity consumers (analogous path through # of electricity producers) →+ feedback from users →+ quality of marketplace/OurPower's products →+ user satisfaction →+ word of mouth →+ public awareness of OurPower's activities →+

R3: available capital/funds →+ OurPower's marketing activities →+ public awareness of OurPower's activities →+ # of electricity consumers (analogous path through # of electricity producers) →+ amount of electricity traded through marketplace →+

R4: available capital/funds →+ OurPower's information/awareness building activities →+ public support for REN →+ # of electricity consumers (analogous path through # of electricity producers) →+ amount of electricity traded through marketplace →+

R5: available capital/funds →+ OurPower's information/awareness building activities →+ public support for community/citizen energy →+ # of electricity consumers (analogous path through # of electricity producers) →+ amount of electricity traded through marketplace →+

R6: available capital/funds →+ OurPower's information/awareness building activities →- societal expectations regarding convenience of energy system →- OurPower's perceived convenience compared to other energy providers or commercial consumers →+ # of electricity consumers (analogous path through # of electricity producers) →+ amount of electricity traded through marketplace →+

R7: available capital/funds →+ OurPower's funding acquisition activities →+ external capital/funding →+

Similar to the regime level, all feedback loops are reinforcing and thus would allow, in theory, for unimpeded "growth" of the initiative. However, time delays due to changes in public awareness and opinions being inherently slow are even more relevant on the niche level. OurPower's sustained efforts in improving the quality of their services, marketing, information and awareness building all depend on sufficient available funds. If the "payout" of these activities in terms of an increase in users (and thus an increase in funds) is strongly delayed, other means of financing must be found in the meantime, which requires funding acquisition activities and may or may not be successful due to external factors.

5.1.5 Summary and Conclusion

5.1.5.1 Origin & Evolution of HE

The energy cooperative OurPower was established in 2018 by a diverse group of founders with different backgrounds in Austria's renewable energy landscape. Among them were renewable energy producers, entrepreneurs, regional innovators in the field of community engagement, and experts in regional policy related to renewable energy. The initiative is driven by the aim of expanding opportunities for citizens to play an active role in Austria's renewable energy transition, as it views citizen involvement and empowerment as essential for the success of this transition. In addition to technological changes, the transition is framed by the CAI as requiring societal innovations that call for new approaches to energy

production and consumption. In support of this goal, OurPower has developed an online peer-to-peer marketplace that enables citizens to sell their self-generated renewable electricity directly to other citizens. Figure 5.1.9 (section 5.1.5.4) illustrates the key developments around the CAI on the niche, regime and landscape level.

At the time of OurPower's founding, Austria lacked a legal framework for citizen and community energy initiatives. While the 2021 Renewables Expansion Act, which introduced energy communities, was already under development, it had not yet taken effect. OurPower thus aimed to bring its vision of community energy to life within the limits of existing laws, while also serving as a real-world example for policymakers of what citizen-led energy models could look like. In this way, the initiative assumed a pioneering role in Austria, introducing a model of direct energy trading between citizens that had not previously existed. By securing funding from a variety of sources – including startup subsidies and research grants – OurPower provides a testing ground for an alternative model of energy sharing, thus fulfilling a shielding function from the pressures of the conventional energy system. In addition, the niche initiative holds an empowering function by placing community energy and citizen participation at the heart of its activities.

While the CAI's communication initially focused on these core themes of renewable and citizen energy, the discourse shifted over time to include broader aspects of the energy system such as regionality, stability and decentralized production. These shifts occurred, among other reasons, due to the impacts of external events on the landscape level such as the Covid-19 crisis, the Russo-Ukrainian war and the resulting energy price crisis, which posed challenges to OurPower's development. Since 2022, the initiative has increasingly been addressing issues of diversity and inclusion in the context of the energy system and has made efforts to activate underrepresented groups such as women and young people.

5.1.5.2 *Organization & Activities of HE*

OurPower is organized as a cooperative, with all members holding a vote at the yearly general assembly regardless of the size of their share. While membership is mandatory for producers wishing to sell their electricity on the marketplace, it is optional for electricity consumers. OurPower's day-to-day business is conducted by the management board and core team, consisting today of around 10 members.

The CAI's core activities center around the marketplace, focusing first on the initial programming and now on maintenance as well as development and testing of new functionalities. Maintaining close ties with its users and collecting feedback from the community are important ways for OurPower to continually improve their services. The recruitment of new users is supported by marketing activities and community outreach, for example through online and in-person talks and workshops on the Austrian energy system and OurPower's work.

In addition to its core business, the initiative supports citizens during the establishment of their own energy communities and offers information and awareness building activities on the topics of renewable energy and citizen participation. As a practice partner in different research projects, usually at the EU level, OurPower also supports the creation of new knowledge around community energy and is able to acquire additional funding. Finally, members of the CAI also participate in public and political discourses around Austria's energy transition, e.g. by publishing texts detailing their views of the current legislation for energy communities, speaking in the media about REN and citizen engagement or participating in events where they present their views and practical experiences on the importance of citizen participation for the energy transition.

5.1.5.3 Goals & intended Outcomes of HE

At its core, OurPower aims to promote Austria's sustainable energy transition by encouraging citizen participation. Rather than focusing solely on sustainability and climate change in its communications, OurPower emphasizes themes that resonate more positively with its users, such as self-sufficiency, energy-independence, regional identity, and citizen empowerment. One of the initiative's central goals is to increase public understanding of Austria's energy system, as a lack of awareness is seen as a major obstacle to expanding renewable energy and engaging citizens in the process.

From the outset, OurPower has been committed to reducing Austria's dependence on the global energy market and fossil fuels. To this end, the initiative seeks to support community energy systems and envisions regional energy markets that offer fair and stable pricing. A key part of this vision is building strong connections between small-scale energy producers and consumers. Although challenges – like the 2022 energy price crisis – have required some flexibility, such as allowing partial electricity sales on the open market, the initiative has remained committed to its core mission.

Ultimately, OurPower presents itself as a meaningful alternative to the existing energy system, which is often marked by global interdependence, price fluctuations, and a lack of local engagement. It aims to foster awareness, facilitate producer-consumer relationships, and provide forums for dialogue around energy justice. The initiative is also increasingly working to ensure greater diversity among participants in the energy system.

5.1.5.4 A multilevel perspective on the CAI using the MLP visualization

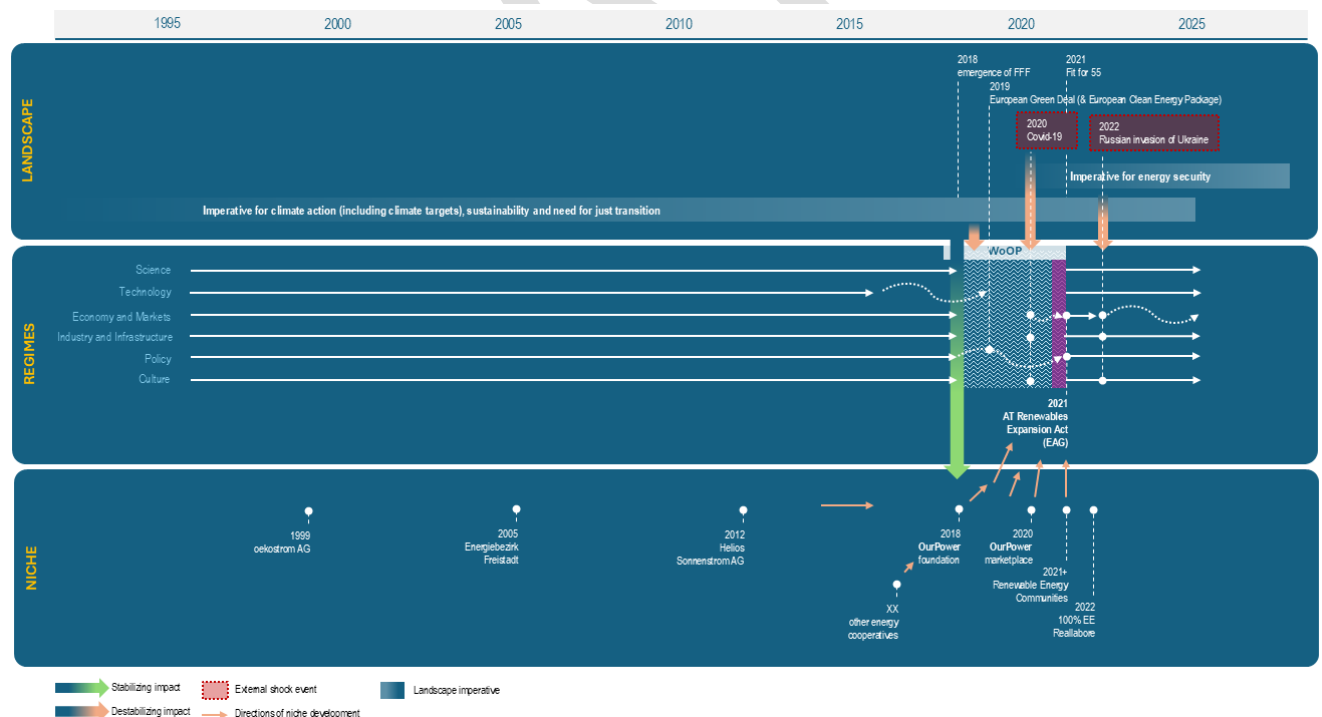


Figure 5.1.9: MLP visualization for OurPower

5.1.6 References

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5.2 Energy Community in the Rural Municipality of Monachil (ES)

5.2.1 Interviews

5.2.1.1 Documentation of application of the method

The interviews followed a semi-structured interview guide and were conducted between May 2024 and November 2024. All interviews were recorded and transcribed verbatim for analysis. Table 5.2.1 shows a summary of interviews' information. Interviewees have been chosen to gather insights from within the CAI itself and from relevant stakeholders involved in the promotion and passing of the energy communities in Spain.

Table 5.2.1. List of interviews

Reference	Interviewee (Anonymized)	Date / Mode	Length
MR01	Monachil Councilman Tourism and Environment	19/11/2024 / Online	1.5 h
MR02	Engineer at <i>Agencia Provincial de la Energía</i>	13/11/2024 / Online	1 h
MR03	Mayor of Monachil	07/11/2024 / In person	1 h
MR04	Member association <i>La Olla del Patio</i>	02/10/2024 / Online	1 h
MR05	Social dynamization expert <i>PASOS Participación</i>	19/11/2024 / Online	1h
MR06	Expert in energy communities of <i>Cooperase</i>	21/05/2024 / In person	1.5 h
MR07	Engineer expert at Andalusian Energy Agency	21/11/2024 / In person	1 h

5.2.1.2 Results

Emergence and transformation of the CAI

The initiative arose from residents' concern about the high cost of electricity and the need to find local energy supply solutions (MR03). Driven in 2018 by residents (MR06), supported by the City Council, offering technical, legal, and administrative advice to those interested, which served as a catalyst to mobilize the population and begin the first informational meetings. The initial boost was reinforced when the CAI won the “Social Germinator” award from *SOM Energía*, which provided the seed funding necessary to launch the project and encourage citizen participation (MR05).

From the beginning, the initiative was linked to the organic products consumer group *La Olla del Patio*, whose members, committed to sustainability and cooperation, were fundamental to its launch (MR04; MR05). The idea spread through the group's informal network of organic products consumers, subsequently attracting those interested in energy self-sufficiency. In addition, institutional support was key: the Monachil Town Council, through the Municipal Energy Office (OME, by its Spanish acronym), provided spaces for meetings and assemblies, and lent the roof of the Sala Miraflores for the first installation without making a direct investment (MR01; MR03). European legislation on renewable energies and the possibility of sharing energy offered a favorable framework that fostered greater energy autonomy.

The initial objective focused on reducing electricity bills and offering a local solution for energy supply, although the members of *La Olla del Patio* also pursued broader goals such as environmental protection,

energy sovereignty, community action, and the mitigation of energy vulnerability (MR03; MR04). Over time, participation expanded to include people seeking to lower their energy costs, although in some cases the reduction was not significant. The experience enriched the project, orienting it towards expanding the energy community to other neighboring municipalities and promoting the concept of sharing energy in a common space, which supports the energy transition, sustainability, and the fight against climate change (MR06).

Relationship with sustainability and climate change

From its origins, environmental awareness has been a key driver, even if it was not always explicitly expressed. Concerns over climate change and reducing the use of fossil fuels have guided the transition to renewable energies. An example of this is the modification of the Monachil Town Council's electricity supply contract to green energy, in line with United Nations (UN) Sustainable Development Goals (SDGs) (MR01; MR04). The initiative is recognized as a small but significant contribution in the fight against climate change at the provincial, Andalusian, and Spanish levels, having inspired similar projects on those territorial levels and demonstrating tangible results in the realm of shared energy self-consumption (MR06).

Furthermore, it has managed to foster collaborative networks that have had social and political repercussions, even reaching the Granada City Council, which evidences its impact on the public agenda. The integration of these practices into the daily management of some local and provincial administrations reinforces the institutional commitment to the energy communities' model (MR06).

Niche characteristics and functions of protection and empowerment

The Monachil River Energy Community (CERM, by its Spanish acronym) is defined as a niche by offering a concrete response to the issue of rising electricity costs and by proposing an alternative based on collective self-consumption and community governance, in contrast to the centralized, profit-oriented models of large companies (MR01). Its roots in *La Olla del Patio* facilitated the building of trust and commitment, while the support from MR06 helped overcome bureaucratic and logistical barriers.

In terms of functions, the initiative acts protectively by offering its members greater stability and potentially lower prices, avoiding market volatility and dependency on large companies (MR01; MR02). It also allows the participation of people without the resources for individual installations, reducing inequalities and protecting them from the adverse effects of climate change through the promotion of renewable energies (MR06).

In addition, it empowers citizens by giving them control over their energy supply and the possibility to actively participate in the transition to a more sustainable model. It promotes energy sovereignty, the acquisition of new skills, and the strengthening of social cohesion, thereby boosting local leadership in the realm of renewable energy (MR04; MR05).

Finally, the initiative positions itself in tension with the dominant energy model, challenging centralization and fostering collaboration with various institutions. However, it faces the risk of being co-opted by large companies if a clear legal framework is not consolidated to secure its social and environmental benefits (MR03; MR06).

In summary, the CERM represents a pioneering example of how a local response, based on participation and collaboration, can transform energy consumption and management, contributing to sustainability and addressing climate change, and paving the way for greater autonomy and social justice in the energy sector.

5.2.2 Textual Analysis

5.2.2.1 Documentation of application of the method

For the Textual Analysis (TA) method, a first collection of text corpus was carried out. A total of 24 texts were gathered:

- 13 materials *about* the CAI
- 11 materials *indirectly related to* the CAI
 - 1 framed within a generalist approach
 - 13 framed within the niche level
 - 8 framed within the regime level
 - 2 framed within the landscape level

The 24 textual sources have been analyzed for gathering input on several key topics such as who is the speaker, who is spoken to, what is spoken about and how, among others.

5.2.2.2 Results

Meta-data analysis: Voices and visibility

Voices of the topic

The analysis of the textual corpus reveals a diverse set of voices involved in the discourse surrounding CERM as a CAI. These voices range from grassroots organizations and local government officials to technical experts, cooperative networks, and energy regulators (El Salto, 2021; OME, Cooperase y PASOS Participación, 2021; Facebook CERM, 2020-2022). While CERM is widely recognized for its bottom-up approach, the visibility and dominance of different stakeholders vary significantly in public discourse.

The most dominant voices in the discussions include:

Residents

Energy communities are made up of various types of residents who seek to benefit from the production and consumption of renewable energy in a collective and supportive manner. In the case of Monachil there are fifty or so residents involved in the CERM which is actively seeking to bring together more residents from Monachil, Cájar, Huétor Vega and La Zubia. Among the participants there are families, including those living in energy poverty, who receive special attention as a percentage of the energy generated goes to these families through agreements with the municipal social services (Cooperase, 2020; 20minutos, 2021; Granadaesnoticia, 2021; Facebook CERM, 2020-2022; El Salto, 2021; Granadaesnoticia, 2023; La CERM crece, 2024; Agenda Pública, 2021).

Local authorities

- *Monachil Town Council*: The local government has supported CERM through policy, provision of public rooftops and administrative facilitation. It has been a key player in the creation and support of CERM (Ayuntamiento de Monachil, 2021; Ideal, 2021).
- *Municipal Energy Office (OME, by its Spanish acronym)*: to facilitate the energy transition in the municipality, has given a great boost to CERM by facilitating all processes, providing advice, facilitating the creation of renewable energy infrastructures and promoting citizen participation through initiatives such as the Monachil River Energy Community. It also plays an important role in the fight against energy poverty in the municipality (El Salto, 2021; Cooperase, 2020; Facebook CERM, 2020-2022; Agenda Pública, 2021).

Cooperatives/Associations

- *PASOS Participación*: It helped to raise awareness of the CERM project among the inhabitants of the Monachil River area. It dynamized efforts to strengthen social cohesion and foster links of mutual support and interdependence among the population. It provided organizational accompaniment, facilitation of meetings and forums. It also promoted horizontality and the development of social capacities to generate collective learning processes. Its approach focuses on the sovereignty of citizenship, promoting initiatives ‘from, by and for the people’ (PASOS Participación, 2024).
- *Cooperase*: The idea and promotion of the energy community project originated from them, and they are recognized as one of the pioneering cooperatives in the formation of energy communities in Andalusia. Drawing on their previous experience coordinating the OME in Monachil, they are now responsible for leading and managing the technical aspects of the project (Facebook CERM, 2020-2022; Cooperase, 2020; El diario, 2022; CERM, 2020).
- *La Olla del Patio*: This association for the consumption of organic products took on a predominant role because some of them are members of CERM, who already had experience in participatory collective actions and cooperative initiatives, reinforcing the participatory nature of CERM.

The background voices:

Energy companies

- *Endesa*: As an electricity distribution system operator (DSO), *Endesa* can play a role in facilitating or hindering the development of self-consumption and, by extension, of energy communities (Facebook CERM, 2020-2022).
- *SOM Energía*: The creation of the energy community was supported through funding awarded by the Social Germinator prize, granted by the cooperatives SOM Energía and Coop57. CERM builds on citizen networks and collaborates with the network of citizen electricity cooperatives coordinated by SOM Energía (Cooperase, 2020; El Salto, 2021).

Institutions

- *Ministry for Ecological Transition*: The Ministry acts as a facilitator of renewable energy projects and energy communities. It has transposed part of the European directives on energy communities by offering grants for energy community support. The *Instituto de Diversificación y Ahorro Energético* (IDAE, by its Spanish acronym) facilitates the recognition of networks by having created a national repository of Community Transformation Offices.



- *Junta de Andalucía*: The Andalusian Energy Agency (regional level) includes a specific measure to promote energy communities within its energy strategy. It has developed the pilot project *Torreblanca Ilumina*, provided financial incentives, and led the European POVERTY project, in which CERM also participated. CERM itself is considered a pilot initiative within this framework (Ideal, 2021).

Researcher institutions

- *University of Granada*: Contributes through research and collaboration in projects related to renewable energy and energy communities (Cooperase, 2020; El Salto, 2021; Springer, 2015).

Visibility of the topic

The visibility of CERM has grown over time, moving from a local experimental project to a nationally recognized model for energy community initiatives. Key phases of public visibility include:

Early Stages (2020-2021): Local news articles and social media posts primarily focused on the creation and legal establishment of CERM, emphasizing its participatory nature (Pérez-Pérez & Díaz-Cuevas, 2022).

Consolidation (2021-2022): The more recent discourse highlights barriers in the regulatory frameworks, in particular delays in grid access and the difficulty of scaling up the energy community due to legal constraints. There was a mixture of frustration and resistance at this stage, as CERM's core leadership remained committed despite these challenges (El Salto, 2021; Facebook CERM, 2020-2022).

Expansion Phase (2022-2023): As Monachil's model was shared in regional and national forums, its visibility increased within energy transition networks. The case was used as an example for other emerging community energy projects, reinforcing its credibility.

Challenges and Grid Connection Delays (2023-Present): Currently, despite the regulatory changes made by the Ministry to ensure equal access to the grid and maximum periods for granting connection, there is a new obstacle (BBVAresearch, 2025; Cooperase, 2024) noticed by Cooperase and some press reports: the grid's lack of capacity to absorb all the power that is being requested, which means that many initiatives are being denied access. This may also influence the future expansion and scalability of CERM.

The public discourse around CERM has shifted from a local sustainability project to a broader discussion on energy autonomy and policy reform. This aligns with wider national conversations about the role of community-led energy projects in Spain's transition to renewables. The increasing media coverage and participation in academic and institutional discussions suggest that CERM's case is influencing the national and regional policy agenda.

Manifest content analysis: Themes and stakeholder representation

The textual analysis of Monachil's energy transition highlights key themes related to energy justice, social inequality, local governance, and infrastructure barriers (OME, Cooperase and PASOS Participación, 2021; El Salto, 2021).

Although climate change and democracy are not explicitly central topics, they are deeply embedded within the broader debates on energy justice and governance. The following subsections detail how these themes emerge.

Climate change and the energy transition

Monachil's energy transformation is framed primarily as a socioeconomic and infrastructural issue, yet its implications for climate action are significant. The following aspects illustrate how climate change is present in Monachil's energy discourse (Cooperase, 2020; Facebook CERM, 2020-2022; Diputación de Granada, 2024), where, for instance, local posts by CERM (Facebook CERM, 2020-2022) adopt an informal, community-building tone—complete with neighbourly language—to present the energy transition as an everyday, household matter rather than a technical policy agenda.

Headlines such as 'Monachil planta cara a la subida del precio de la luz' (Granada es noticia, 2023) frame the initiative as a collective act of self-defence against volatile markets, mobilising a David-versus-Goliath narrative that foregrounds civic agency over climate metrics.

Indirect connection via energy transition and renewable energy policies

National and Regional Renewable Energy Strategies: The Ministry for Ecological Transition has integrated community energy projects into its climate adaptation policies; however, the regulatory development for its implementation has been partial and slow: Monachil benefits from new national self-consumption regulations that enable energy sharing, indirectly contributing to climate change mitigation (Cambioenergetico, 2020). The provincial press release that labels CERM a 'pioneering' response to energy poverty reinforces institutional authority and confers moral legitimacy on the community-led model.

Corporate framing of renewable energy investments

Reports (Amigos de la Tierra, 2021) deploy justice-laden vocabulary —'collective', 'solidary', 'accessible'— to portray the project as an ethical counter-proposal to corporate energy regimes. On the other hand, *Endesa* (Cooperase, 2024; El Salto, 2021) publicly promotes its investments in renewable energy, framing itself as a key actor in the transition. However, local residents and advocacy groups perceive this as greenwashing, since *Endesa* simultaneously delays community energy projects by imposing bureaucratic and technical hurdles for grid connection. The company's responses to criticism often highlight large-scale renewable projects while neglecting to address the structural barriers faced by local initiatives like CERM. By repeatedly showcasing aerial shots of vast solar power plants in glossy brochures, *Endesa* shifts attention to its own scale and 'industrial leadership', visually sidelining smaller community experiments like CERM.

Regulatory loopholes favoring large energy corporations

Endesa uses regulatory complexity to delay Monachil's energy transition, citing grid stability concerns and financial justifications (Alianza por el autoconsumo, 2023; En verde, 2024). At the same time, the company expands its own large-scale renewable projects with fewer administrative barriers, reinforcing a dual-speed transition model where corporate interests are prioritized over decentralized energy governance, as some news reports have stated (Endesa, 2022; El País, 2025; Alianza por el autoconsumo, 2023; En verde, 2024).

Absence of climate targets

The local discourse focuses on affordability, access, and governance rather than environmental imperatives. Advocacy groups and environmental organizations like *PASOS Participación* and *Cooperase* frame the Monachil initiative within the climate justice movement, but this narrative has yet to fully

permeate local activism (20minutos, 2021; Granada es noticia, 2023; El Salto, 2021; Cooperase, 2020; Facebook, 2020-2022).

Democracy and energy governance

Community energy movement exemplifies democratic participation in energy governance. However, institutional barriers and corporate control have limited local autonomy (OME, 2024; El Salto, 2021; Cooperase, 2020; Facebook CERM, 2020-2022).

Framing of energy access as a democratic right

The Monachil Town Council now plays an active role in CERM, legitimizing energy democracy as a local governance priority, while Monachil residents demand recognition of energy access as a basic right, reinforcing democratic entitlements in energy governance.

Failure of institutions and regulatory barriers

The Ministry for Ecological Transition promotes energy communities, yet bureaucratic inertia delays implementation.

The slow approval processing projects undermine the democratic participation of citizens in the energy transition and favor *Endesa's* monopoly.

Grassroots mobilization and participatory democracy

CERM's participatory governance model showcases bottom-up democracy in action. Residents actively engage in discussions about policy, shaping participatory energy governance through campaigns to expand membership (2023-2024).

Timeline of the HE

The textual corpus reflects how the energy transition in Monachil evolved from a small-scale initiative into a structured, community-driven movement recognized at the institutional level. In 2018, initial discussions on local renewable energy solutions began among a small group of residents and activists. By 2019, the first public meetings were held to organize what would later become the CERM. During this period, members were committed to environmental protection and the fight against climate change and stressed the need to promote energy sovereignty.

The formal establishment of CERM in 2020 marked a turning point, as the community actively sought to implement energy-sharing mechanisms. However, in 2021 and 2022, regulatory barriers and delays by *Endesa* in granting grid access slowed the project's momentum. This period saw increasing frustration among residents and activists, with media coverage highlighting bureaucratic challenges. During this period, frustration among residents and activists grew, and bureaucratic problems were highlighted in the media. The delays meant that some of the members who were more economically interested than bucolic became jaded, which led to the abandonment of the CAI and reduced the size of the collective.

By 2023, advocacy efforts intensified, focusing on expanding membership and securing institutional support. In 2024, the Monachil Town Council officially joined CERM as a partner, reflecting growing institutional recognition of community energy governance. The project is now entering a phase of expansion, aiming to involve a greater number of households and integrate additional renewable energy

sources (Cooperase, 2020; Facebook CERM, 2020-2022). This phase aims to open up the initiative territorially and include more population profiles by softening the discourse related to sovereignty and empowerment and incorporating more arguments about reducing electricity bill costs.

Stakeholder analysis

The texts illustrate how various stakeholders have played evolving roles in Monachil's energy transition. Initially, residents were individual actors seeking alternative energy solutions. Over time, they coalesced into a formal energy cooperative, now recognized as a key driver of the local transition.

The Monachil Town Council initially played a passive role, providing limited logistical support. However, as the movement grew and the benefits of local energy autonomy became evident, the municipality took a more proactive stance. In 2024, it formalized its partnership with CERM, reinforcing its commitment to decentralized energy governance. Although the role of the municipality as an institution is limited, it has played an active role from the beginning by setting up the OME, which provides support and advice to neighbors and the energy community.

Endesa, on the other hand, remains a central figure in the debate, often seen as a barrier to community energy expansion due to delays in grid integration and regulatory constraints. The utility company continues to prioritize centralized energy models, frequently citing technical concerns and grid stability as reasons for hesitancy in approving community-led projects.

Advocacy organizations such as *Cooperase* and *PASOS Participación* have provided technical and legal support, disseminated and energized the initiative, framing it within broader debates on energy democracy and climate justice. Their involvement has strengthened the movement by introducing specialized knowledge and raising public awareness (Cooperase, 2020; Facebook CERM, 2020-2022; Amigos de la Tierra, 2021).

Shifting themes and calls to action

Early discussions on Monachil's energy transition centered around affordability and the technical feasibility of small-scale solar installations. As the project developed, attention shifted toward governance, emphasizing the right of residents to control their energy production.

Between 2021 and 2022, the focus intensified on the bureaucratic and regulatory obstacles imposed by *Endesa*, leading to calls for greater policy intervention to facilitate community energy projects. The frustration surrounding these delays led to a stronger mobilization of residents, culminating in increased local engagement and wider media attention.

By 2023, the discourse had expanded to include social justice narratives, highlighting the inequities in energy access and the potential of community-driven solutions. In 2024, advocacy efforts focused on institutionalizing energy democracy, reinforcing CERM as a model for decentralized governance. The call to action has now shifted from technical fixes to systemic reform, demanding greater accountability from energy providers and a stronger commitment from regulatory bodies to support local initiatives.

The discourse on Monachil's energy transition reveals significant power dynamics. *Endesa* is frequently portrayed as a corporate entity that prioritizes financial and regulatory control over community-driven energy solutions. In contrast, residents and advocacy groups are depicted as grassroots actors striving for energy autonomy against structural constraints.

The power struggle between centralized energy utilities and decentralized community initiatives is a recurring theme, reflecting broader tensions in Spain's energy governance. The texts suggest a growing resistance to corporate dominance, as residents increasingly frame energy autonomy as a fundamental right rather than a market-based service.

Latent content analysis: Power relations and competing discourses

Semantic fields

The texts contain distinct semantic fields that illustrate these competing narratives. Community members and advocacy groups frequently use terms such as "rights," "sovereignty," and "participation", reinforcing the democratic framing of energy access. In contrast, *Endesa* and regulatory bodies emphasize "infrastructure," "grid stability," and "regulatory compliance", framing the issue as a technical and logistical challenge rather than a governance or justice concern.

This contrast highlights the competing discourses at play: while one side argues for structural change and community empowerment, the other defends the existing centralized energy model under the guise of efficiency and safety.

Foregrounding and who gets to speak

The early discourse on Monachil's energy transition was dominated by technical explanations and regulatory justifications, primarily articulated by energy providers and policymakers. Over time, residents and advocacy groups gained greater visibility, shifting the focus from technical challenges to systemic barriers and democratic rights.

As CERM expanded its influence, media narratives (Diputación Premia a Monachil por un Proyecto pionero contra la pobreza energética, 2023) began to reflect a more balanced view, recognizing the legitimacy of community energy models. This shift signifies a broader change in public discourse, where grassroots movements and local-led advocacy are now central to the conversation on energy governance (El Diario, 2022; Facebook CERM, 2020-2022).

Methodological reflections

Challenges and assumptions

Analyzing Monachil's energy transition posed several challenges, particularly in accessing institutional data on regulatory decisions and utility company negotiations. The opacity of certain bureaucratic processes made it difficult to trace the exact delays and obstructions caused by *Endesa*, as much of the decision-making process remains hidden within corporate governance structures.

Initial assumptions centered on the technical and economic feasibility of community energy projects, but as the analysis progressed, it became clear that institutional resistance and corporate control were key obstacles. The media's portrayal of the issue also evolved, moving from technical debates on energy efficiency to broader discussions of democratic governance and systemic reform.

Furthermore, the texts suggest a growing sense of urgency among residents and activists, as energy security and climate imperatives become increasingly pressing. This urgency has driven more assertive advocacy, pushing local and regional policymakers to acknowledge the necessity of supporting decentralized energy governance.

These findings highlight the importance of institutional ethnography in understanding energy transitions, particularly the role of grassroots movements in shaping the discourse and practice of energy democracy. The case of Monachil provides valuable insight into how small-scale, community-led initiatives can challenge entrenched power structures and advocate for systemic reform in the energy sector (Facebook CERM, 2020-2022).

5.2.3 Social Network Analysis

5.2.3.1 Documentation of application of the method

The Social Network Analysis (SNA) has built on the previous work done in the first research phase that served to contextualize the HE. For this phase, MLP theoretical framework and various methods and data sources were used to capture a first picture of the scale, dynamics and relationships between the various elements that constitute the niche in which the HE occurred. The results are gathered in the Context and Stakeholders Analysis for Historic Examples of Political Participation report (Deliverable 1.2).

Building upon this first research phase, those findings have been complemented and largely enriched with two other methods, namely the Semi-structured interviews with key representatives of the CAI (as described in section 5.1) and the HE Textual Analysis (as described in section 5.2). This second phase has helped in understanding the type, the intensity, the impacts, and the interests of the relationships between the different stakeholders, in addition to identifying new ones and better detailing the different interactions, as well as the flow of resources between the stakeholders.

The SNA has been depicted in a dedicated diagram for the HE, along with an excel file gathering the breakdown of the different stakeholders' relationships.

5.2.3.2 Results

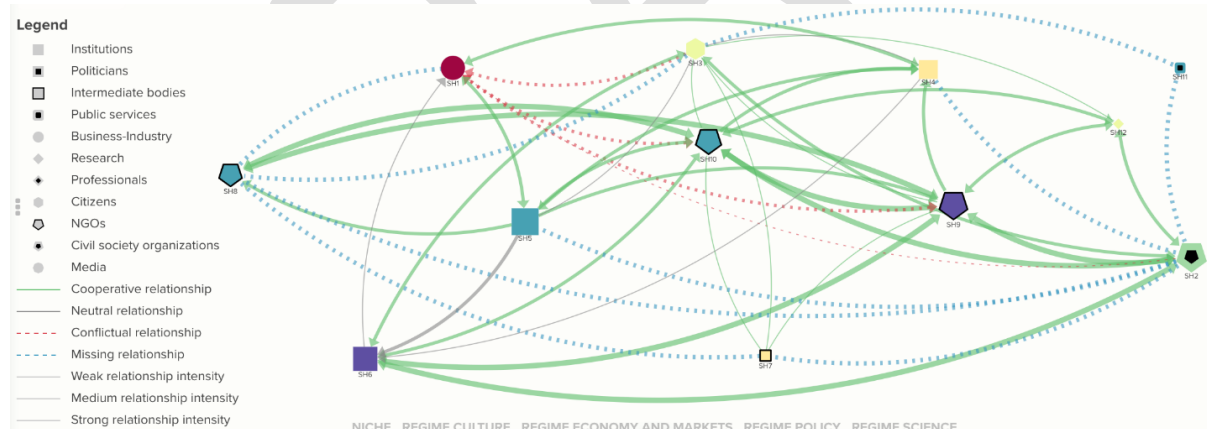


Figure 5.2.1: Network mapping of the Energy Community in the Rural Municipality of Monachil, Spain

Influence and power in the network

The most powerful and influential actors in the network are the promoters and co-founders of the CERM: people from *La Olla del Patio* (SH2), *Cooperase* (SH9), and *PASOS Participación* (SH10), which operate at the niche level as civil society organizations and NGOs, along with the Monachil Town Council through its OME (SH6), supporting this CAI from the regime level. These stakeholders oppose corporate involvement in community energy projects, demonstrating their commitment to citizen-led initiatives. This stance has not only enabled a successful CAI in terms of social economy through energy sharing but, together with

other pioneering energy community initiatives in Spain, has also led to the recognition of equal access to the electricity grid for any type of collective (through a Royal Decree law) and to the shortening and clarification of connection deadlines.

Their power and influence stem from a combination of cooperative efforts and persistent advocacy. Since the start of the CAI, *Cooperase* (SH9), *PASOS Participación* (SH10), people from *La Olla del Patio* (SH2), and the OME (SH6) have formed a cluster, maintaining a strong cooperative relationship over time. Having civil society organizations with technical and social skills work alongside a public entity has enabled more residents to join the initiative and helped implement a project for energy sharing through the community. Thus, the effective use of moral (public recognition and external support), cultural (technical know-how and operational methods), socio-organizational (social networks and supporting organizations), and human resources has been key to achieving the energy community's goals.

Conflict and tensions within the network

Most of the relationships among the identified actors are cooperative, with 30% classified as strong, 61% as medium, and 9% as weak. The primary strong relationships exist among the CAI's promoters and co-founders (*Cooperase* (SH9), *PASOS Participación* (SH10), people from *La Olla del Patio* (SH2), and the OME (SH6)). The only conflictual relationships, classified as medium, exist between some promoters, co-founders and members of the CERM (*Cooperase* (SH9), *PASOS Participación* (SH10), and Local residents of Monachil (SH3)) and *Endesa* (SH1), the electricity distribution company. This conflict arose due to delays in securing approval for the generation system's grid connection for the energy community. These delays caused some members of the Energy Community to withdraw and opt for individual generation systems rather than a communal one.

All maintained relationships (mutual and directed) between niche stakeholders and the other regime stakeholders—different to *Endesa* (SH1)— are cooperative. And, within the regime level stakeholders, half of the relationships are cooperative and half neutral.

Niche maturation and development

The first window of opportunity appeared in 2011, within the framework of Spain's 15M (Indignant Movement for the Revitalization of Social Movements), at which point only *PASOS Participación* (SH10) and *La Olla del Patio* (SH2) were established and working on initiatives unrelated to the energy community. The second, and main, window of opportunity occurred in 2018, when the Spanish government began promoting energy communities as a tool for social transformation, allowing citizens to produce their own electricity. By then, *PASOS Participación* (SH10), people from *La Olla del Patio* (SH2), and *Cooperase* (SH9) were already cooperating. In the same year, the OME (SH6) was created, and—with support from the Town Council—these actors worked to establish the CERM. Their strong, mutual cooperation was based on moral, cultural, socio-organizational, and human resources.

Meanwhile, certain weak relationships, such as those between the promoters' actors and the local residents of Monachil (SH3), may have helped increase membership in the CAI but did not achieve regime change due to the technical and legal complexity of energy issues. However, had there been a relationship between some CAI's promoters and members and the Ministry for Ecological Transition and Demographic Challenge (SH5) at the time, it might have facilitated the latter more quickly.

On the other hand, several relationships are missing—particularly between local stakeholders (*La Olla del Patio* (SH2) and local residents of Monachil (SH3)) and institutional stakeholders such as the *Junta de Andalucía* (SH4), the Ministry for Ecological Transition and Demographic Challenge (SH5), the Energy Poverty Advisory Hub (SH7), and SOM Energia (SH8). Most of these institutions operate outside the CAI's region, or even outside the country. This indicates a lack of interaction between niche stakeholders and regime stakeholders, especially with those regime stakeholders operating at macro-regional levels and beyond.

5.2.4 System Mapping

5.2.4.1 Documentation of application of the method

The System Mapping for the CERM builds on the initial research conducted within the CO-SUSTAIN project and situates the case within the MLP framework. This analysis draws on both Semi-structured Interviews (Section 5.1) and Textual Analysis (Section 5.2), which together provided insights into how niche dynamics developed in response to regime-level constraints and opportunities.

The textual sources, including press articles, municipal reports, and campaign materials, were complemented by seven interviews with key stakeholders from local institutions, civil society organizations, and regional energy agencies. These inputs helped identify the main factors shaping the development of CERM and revealed causal relationships among them.

This process led to the construction of Causal Loop Diagrams (CLD) that visualize how community-led efforts to promote energy autonomy interact with cultural tensions and regulatory barriers. The resulting maps highlight reinforcing dynamics (e.g., growing solar adoption and community confidence) as well as balancing forces (e.g., institutional delays and fragmented participation), and are annexed to this report.

5.2.4.2 Results

Regime level

Regime level issue that led to niche development(s):

The dependency on external energy sources, in the context of climate change and the anticipated rise in electricity prices, led to the need to develop initiatives to produce their own energy, aiming to reduce reliance on the electricity market and achieve energy independence and sovereignty. In 2020, the COVID-19 pandemic forced people to stay home and cover higher electricity bills, while the Russian invasion of Ukraine triggered an increase in gas prices, which impacted electricity costs across Europe. In Spain, despite the Iberian exemption (a mechanism to mitigate the impact of gas prices on electricity costs in the peninsula), electricity prices rose significantly, incentivizing the installation of solar panels, collective self-consumption, and energy communities. The founding collective in Monachil, composed of members from *La Olla del Patio*, had a strong environmental awareness and concern about climate change.

Patterns of key factors at regime level

Pattern 1: Electricity price increase

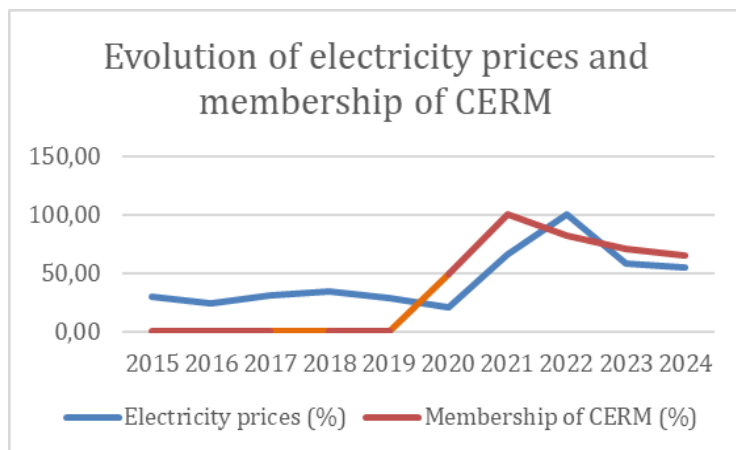


Figure 5.2.2. Evolution of electricity prices and membership of CERM (Source: Facebook CERM (2020-2022) and interviews (MR06; MR02; MR05); Endesa (2022); El País (2025); Alianza por el autoconsumo (2023); En verde (2024))

The evolution of membership in the CERM has closely mirrored fluctuations in electricity prices and external socio-political events. Prior to 2020, while electricity prices were relatively stable, growing concerns about fossil fuel dependency and climate change motivated the creation of OME Monachil, which began promoting energy-saving initiatives and collective solar purchases.

As can be seen in Figure 5.2.2, between 2020 and 2022, a sharp rise in electricity prices—driven by pandemic-related confinement and, later, the geopolitical impact of the war in Ukraine—significantly increased household energy costs. This surge catalyzed the formal establishment of CERM, attracting many new members motivated by economic and environmental concerns. However, bureaucratic delays, particularly from *Endesa* in providing grid connection, postponed energy sharing until 2022. This discouraged some participants, leading to early withdrawals.

From 2022 to 2024, electricity prices declined somewhat but remained high compared to pre-pandemic levels. During this period, CERM faced a gradual decline in membership. Some members with private rooftop solar installations opted to leave, finding it more profitable to sell surplus energy independently rather than participate in the collective model. Additional barriers, such as grid access issues and complex regulations, continued to limit the community's expansion. Despite these setbacks, CERM has persisted in its efforts to diversify participation and extend its reach to nearby towns, laying the groundwork for future growth.

Archetype discussion

The development of CERM reflects a Shifting the Burden dynamic. Instead of enabling structural reforms to support community energy, *Endesa* and public institutions have relied on short-term fixes, such as limited grid improvements or administrative adjustments. These measures temporarily eased tensions but failed to resolve core issues like delayed grid access and inadequate regulatory support.

As frustrations mounted—particularly during periods of high electricity prices and bureaucratic delays—some members left the community, opting for individual solutions that seemed more efficient. This pattern illustrates how superficial responses have weakened collective momentum and, while underlying structural barriers, remain unaddressed.

Pattern 2: Activism growth vs. Institutional resistance

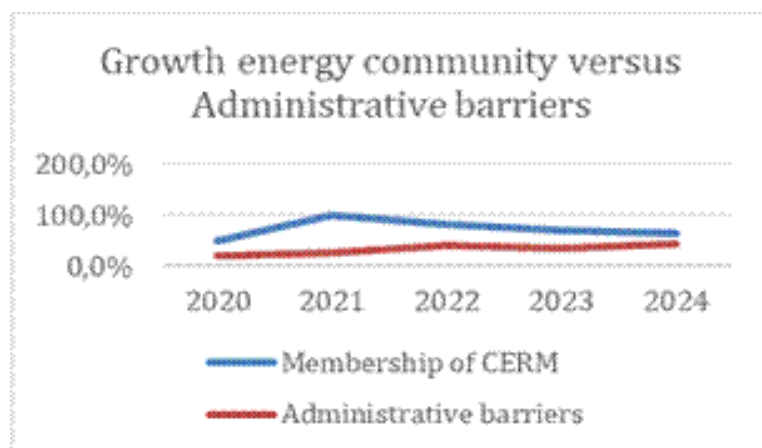


Figure 5.2.3: Growth of energy community and administrative barriers (Both variables are represented as a percentage, taking as a maximum for CERM members the year in which they had the most) (Source: media and interviews)

As electricity prices rose and public interest in energy autonomy increased, community activism in Monachil intensified. This surge in momentum led to the creation of CERM in 2020, backed by earlier awareness-raising efforts by OME Monachil (2018–2020). However, just as the initiative was gaining strength, it encountered growing resistance in the form of bureaucratic and administrative delays, especially from *Endesa*, which repeatedly postponed granting grid connection points.

As can be seen in Figure 5.2.3, from 2021 to 2022, these obstacles significantly slowed CERM's expansion. Members grew frustrated as the energy-sharing phase was delayed, and some left the initiative altogether. The lack of enforceable national regulation allowed such delays to continue without consequence, limiting the community's ability to scale its impact.

Since 2023, the initiative has pursued advocacy and legal pressure to improve regulatory conditions and support expansion to neighboring towns. Nonetheless, the pattern reveals how institutional inertia and administrative hurdles have tempered the growth of an otherwise promising grassroots effort.

Archetype discussion

In line with the *Limits to Growth* archetype, the rapid expansion of *CERM* was constrained by institutional barriers that limited its ability to scale effectively. Bureaucratic delays, lack of clear regulatory enforcement, and grid access restrictions hindered the initiative's ability to fully develop shared self-consumption models.

Although activism initially grew in response to rising energy prices, frustration among members and regulatory inertia prevented immediate policy changes. Some members left the initiative, leading to a temporary decline in participation. However, recent efforts to engage local authorities and expand the initiative to neighboring municipalities signal a potential resurgence of growth.

Media coverage and continued activism have helped maintain public attention on the need for a more accessible and fair regulatory framework for energy communities. However, until structural regulatory

changes are implemented, the initiative's expansion will remain limited by bureaucratic and infrastructural constraints.

Pattern 3: Media coverage and public awareness

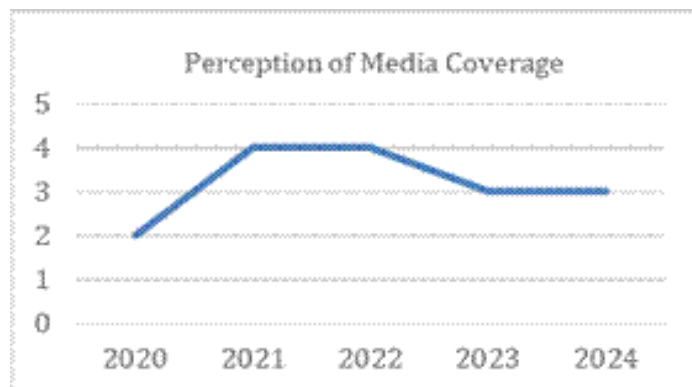


Figure 5.2.4: Perception of media coverage (Likert scale for Coverage: Low (0 to <3), Medium (3), High (>3 to 5)) (Source: RRSS, press articles and interviews)

Media coverage has been a key driver in shaping public discourse on energy sovereignty in Monachil. Between 2018 and 2020, local outlets primarily focused on rising electricity prices and their impact on individual households. While the formation of CERM was reported, the coverage largely framed energy as a market issue beyond local control.

As advocacy efforts intensified from 2021 to 2022 (see Figure 5.2.4), media narratives began shifting toward collective solutions, spotlighting bureaucratic delays—particularly by *Endesa*—in connecting energy communities to the grid. This visibility helped attract public support and new members, while also pressuring institutions to respond.

From 2023 onward, growing coverage of CERM and similar initiatives contributed to a broader narrative around energy justice and community-based solutions. However, the effects of media attention have often been short-lived. Peaks in coverage triggered temporary political interest and public statements, but systemic barriers remained in place once media focus declined.

This cycle illustrates how media can amplify niche initiatives and influence regime responsiveness, but also how momentum can stall without sustained institutional commitment.

Archetype discussion

In line with the Shifting the Burden archetype, media coverage has created temporary surges in awareness, prompting authorities to offer short-term reassurances rather than structural reforms. While public discourse has shifted towards recognizing energy sovereignty as a viable solution, institutional responses remain largely reactive rather than proactive.

Media attention tends to peak during crises—such as prolonged grid connection delays—but without sustained pressure, long-term solutions are postponed. The challenge moving forward is to maintain media engagement and public pressure to ensure that regulatory changes materialize into tangible benefits for energy communities like CERM.

Dynamics at regime level

The regime-level dynamics shaping the development of the CERM reveal a persistent pattern of institutional inertia and fragmented implementation of regulatory frameworks. While national and EU-level discourse has increasingly recognized the importance of community energy as a tool for decentralization and climate resilience, this support has not been fully translated into enabling conditions on the ground.

A major obstacle has been the slow transposition and enforcement of national regulations, such as the provisions supporting energy communities under Spain's Royal Decree 244/2019 and RD 477/2021. These policies aim to simplify self-consumption procedures and promote collective energy projects, yet in practice, their implementation remains partial. *Endesa*, the regional energy DSO, continues to exercise disproportionate control over grid access. This has led to repeated delays in granting connection points, significantly slowing the operational rollout of CERM and similar initiatives. These delays are often justified by technical reasons, but interviews and community reports suggest they also reflect broader political and economic disinterest in decentralizing energy control.

Moreover, the lack of binding enforcement mechanisms allows energy providers and local administrations to avoid accountability, even when procedural timelines are violated. As a result, grassroots initiatives face high administrative burdens and uncertainty, discouraging participation and weakening project momentum. Occasional government gestures—such as reduced connection timelines or new subsidy schemes—provide some relief but often function as temporary fixes rather than structural reforms.

This situation reflects a regime dynamic aligned with a *Shifting the Burden*: instead of reforming institutional practices or grid governance structures, authorities rely on short-term incentives and symbolic support, which fail to address core barriers. These dynamics have limited the transformative potential of community-led projects like CERM and maintained a centralized, utility-driven energy model that resists redistribution of control.

Despite these constraints, growing public pressure, media scrutiny, and legal activism have begun to shift the discourse. While regime change remains slow, community-led initiatives are increasingly seen as legitimate actors in the energy transition, pushing the boundaries of what is institutionally tolerated or technically supported.

CLD of regime level dynamics

R1: Grid Access Barriers & Activism

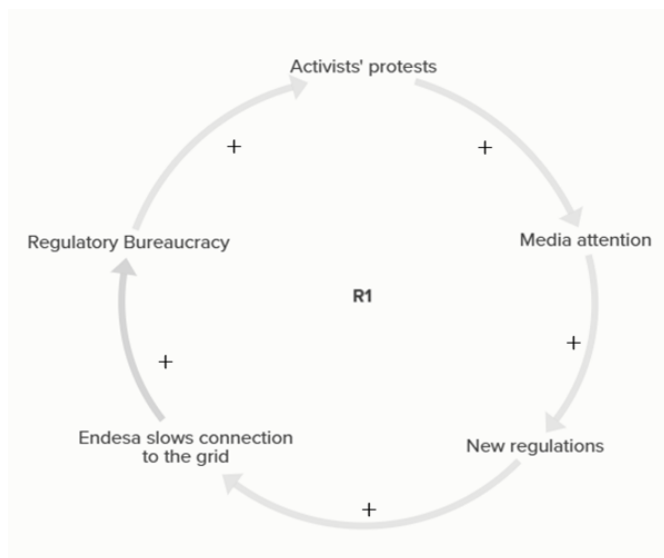


Figure 5.2.5: Reinforcing Feedback Loop Bureaucratic delays in granting grid connection

Bureaucratic delays in granting grid connection → + Activists protest → + Media attention → + Government enacts new regulations → + *Endesa* slows connection to the grid → + Regulatory bureaucracy.

B1: Short-Term Relief from Institutional Responses



Figure 5.2.6: Reinforcing Feedback Loop Community Protests and Advocacy

Community protest and advocacy → + Institutional response (temporary fixes) → – Community frustration → – Protest and advocacy → – Political pressure

Niche level

Initiative goal:

The initiative in Monachil aims to operate autonomously within the electricity system through self-consumption, achieving energy self-sufficiency, promoting energy sovereignty and democratization of energy access, ensuring fair pricing, and contributing to an equitable and sustainable energy transition to help combat climate change.

Pattern(s) of key factor(s) at niche level

Pattern 1: Generating own energy to avoid market dependence

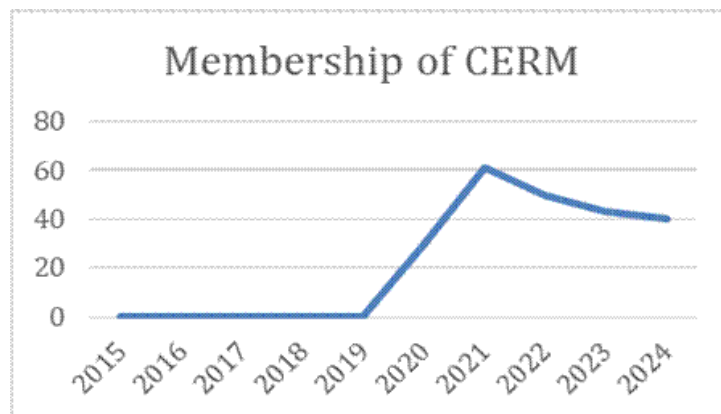


Figure 5.2.7: Membership of CERM (Number of members) (Source: Interviews (MR01; MR03; MR04; MR07); El Salto (2021); Granadaesnoticia (2021); Cooperase (2020); Facebook CERM (2020-2022))

The creation of CERM was motivated by a desire to gain energy autonomy and reduce dependence on volatile market-based electricity pricing. This desire was reinforced by successive rises in energy costs, especially during the COVID-19 lockdown and the energy crisis following the war in Ukraine. Local actors, particularly members of La Olla del Patio, viewed energy self-sufficiency as a way to gain control and reduce exposure to external shocks. With support from institutions such as OME Monachil, *Cooperase*, and *PASOS Participación*, the community began promoting collective self-consumption and installing solar infrastructure.

As Figure 5.2.5 shows, from 2020 onwards, this movement gained momentum, leading to the formal establishment of CERM. The community's early achievements in promoting installations and awareness campaigns generated confidence and increased participation. These successes, in turn, encouraged more residents to explore solar options, creating a reinforcing loop of increased adoption and growing belief in energy sovereignty. The installation of panels and organization of workshops deepened the technical and organizational capacity of the initiative, sustaining enthusiasm over time.

Archetype discussion

Success to the Successful. The growing adoption of self-consumption created positive feedback within the community. As solar infrastructure increased, so did trust in the feasibility of autonomy, leading to more participation. This virtuous cycle reflects the 'success to the successful' archetype, in which early success

reinforces future gains. However, this dynamic remained vulnerable to external constraints such as limited institutional support and grid access restrictions, which later threatened to interrupt this momentum.

Pattern 2: Cultural differences between new rural settlers and traditional residents

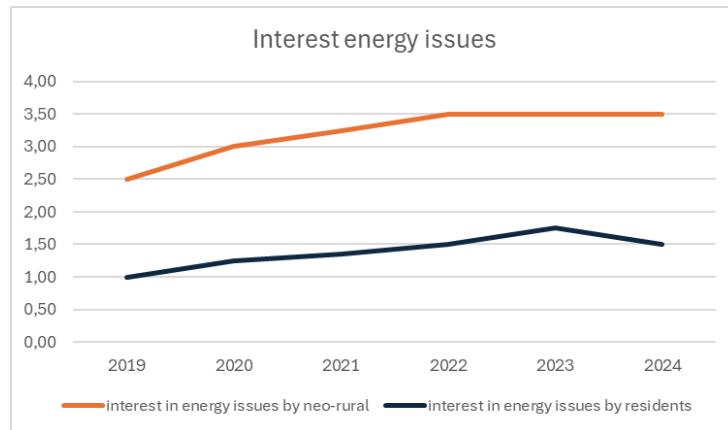


Figure 5.2.8: Interest energy issues (Likert scale for Coverage: Low (0 to <3), Medium (3), High (>3 to 5))

While the vision of energy autonomy united many residents, differences in social and cultural backgrounds led to uneven participation. The initiative attracted both long-term residents of Monachil (castizos) and newer rural settlers (*neorrurales*), who often had different approaches to cooperation, organization, and language. While *neorrurales* were more familiar with collaborative governance and ecological transition models, traditional residents were less accustomed to participatory planning and skeptical of collective action.

These divergences resulted in uneven levels of engagement, slower decision-making, and tensions around governance structures. Workshops, assemblies, and outreach activities were affected by different levels of literacy, digital access, and shared priorities. Despite ongoing efforts to bridge this divide, such as inclusive communication strategies and the involvement of mediating institutions, full integration of all community sectors remained a challenge.

Archetype discussion

Limits to Success. The early growth of CERM encountered internal barriers due to social fragmentation. This reflects the ‘limits to success’ archetype, where success breeds increasing complexity that ultimately slows progress. In this case, internal heterogeneity created friction in the initiative’s ability to maintain cohesion, limiting its capacity to scale and institutionalize.

Pattern 3: Difficulty accessing the grid and its impact on activism

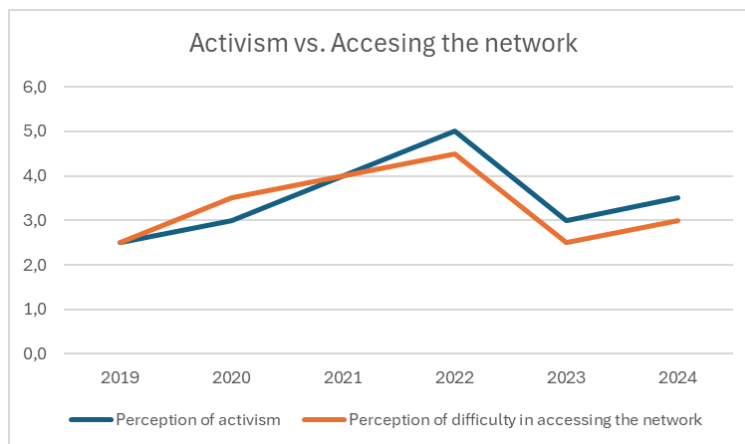


Figure 5.2.9: Activism and accessing the network [Likert scale for Coverage: Low (0 to <3), Medium (3), High (>3 to 5)]

While CERM gained traction at the local level, its expansion was constrained by systemic barriers in the energy regime. A key obstacle was the difficulty of connecting to the grid, which depended on approvals from *Endesa* and compliance with unclear regulatory procedures. Despite formal recognition of energy communities in Spanish and EU legislation, implementation lagged, and energy companies faced few consequences for non-compliance.

These barriers caused long delays in grid connection, frustrating members and undermining the viability of collective energy sharing. The community responded with increased activism, advocacy campaigns, and legal pressure. Protests, public letters, and media appearances were used to push institutions to respect deadlines and implement reforms. While some progress was made—such as reduced grid connection timelines—these victories were partial and often reversed when media attention faded.

Archetype discussion

This dynamic reflects the 'shifting the burden' archetype, where institutions implement short-term fixes rather than addressing systemic problems. Government responses often consisted of announcements, subsidy programs, or symbolic support rather than enforcing regulations or addressing *Endesa's* control over grid access. As a result, grassroots actors were forced to continue mobilizing, maintaining pressure without achieving structural change.

Dynamics at niche level

The CERM has evolved through a mix of grassroots momentum, policy shifts, and institutional barriers. At the niche level, local actors mobilized around the goals of energy sovereignty and ecological responsibility, creating a decentralized self-consumption model supported by organizations like OME Monachil, *Cooperase*, and *PASOS Participación*.

A central reinforcing dynamic emerged from the rise in electricity prices, which intensified demand for self-consumption. Solar installations increased, bolstering community confidence and encouraging further adoption. This feedback loop deepened engagement and helped institutionalize energy autonomy as a shared goal.

However, balancing dynamics also shaped the initiative. Social and cultural differences between long-standing residents and newer settlers led to uneven participation and slowed decision-making. These internal frictions reduced the pace of collective implementation, particularly in planning and governance.

Externally, delays in grid connection approvals and administrative resistance—particularly from *Endesa*—created further barriers. Despite formal policy support at national and EU levels, weak enforcement enabled regime actors to postpone integration.

Together, these dynamics illustrate a niche pushing against institutional inertia while navigating internal complexity. While CERM has made meaningful progress in developing local energy solutions, its broader impact remains contingent on overcoming both regulatory constraints and social fragmentation.

CLD of niche level dynamics



Figure 5.2.10: Reinforcing Loop Awareness Campaigns & Community Participation and Balancing Internal Cohesion Loop

- **R1: Awareness Campaigns & Community Participation**

Awareness → + Community participation → + Successful pilot projects → + Institutional attention → + Awareness.

- **B1: Internal Cohesion Loop**

Community participation → - Decision-making speed → - Self-consumption adoption → + Cultural differences → + Fragmented community → - Community participation

5.2.5 Summary and Conclusion

5.2.5.1 Origin & Evolution of HE

The CERM emerged from residents' growing concern over high electricity costs and a desire for greater local control of energy supply. In 2018, the Monachil Town Council created the Municipal Energy Office (OME, by its Spanish acronym) to guide citizens on energy efficiency and foster collective solutions. Around the same time, a local ecological consumption group, *La Olla del Patio*—already committed to sustainability—, joined forces with other community members who shared an interest in renewable energy. Their collective motivation to reduce reliance on conventional utilities, combined with supportive European Union directives on energy sharing, laid the groundwork for a community-led initiative.

The first step took shape when the OME and local activists collaborated to launch information sessions, explaining how a shared solar installation might work. Technical support and organizational expertise were provided by *Cooperase*, a cooperative dedicated to social innovation, while financial impetus came from winning *SOM Energía's* "Germinador Social" prize, which helped with initial costs. Meanwhile, the Town Council offered space—specifically the rooftop of the Miraflores building—for the community's inaugural solar panels. This move spared the municipality from investing large sums and signalled institutional support for grassroots energy projects.

From the beginning, the CERM did not merely seek cheaper electricity; it also aimed at broader environmental action and social cohesion. Its membership, initially drawn from *La Olla del Patio*, has expanded to include a variety of residents, some of whom bring technical expertise while others represent vulnerable households eager for relief from soaring utility bills. Over time, the community has evolved in several ways. Although the initial focus was on a single shared installation, participants have explored electric mobility options and building retrofits to deepen environmental benefits. With technical, legal, and administrative challenges arising—particularly concerning grid connections and power-sharing regulations—the community has adapted, refining governance structures and outreach strategies.

Today, efforts continue to broaden membership and replicate this model beyond Monachil's borders. Adjacent municipalities, including Cárjara and Huétor Vega, have shown interest in forming similar coalitions, inspired by Monachil's example. The local Office of Social Transformation, jointly managed by *Cooperase* and *PASOS Participación*, further promotes community-led approaches to energy and sustainability. While regulatory hurdles and questions of financial viability persist, the Monachil experience demonstrates how community-driven efforts can gain municipal support, attract external funding, and unite diverse participants around a shared vision.

In essence, the CERM's story is one of grassroots motivation and municipal facilitation. What began as a local response to high electricity prices has evolved into a broader movement for environmental stewardship and cooperative energy governance, providing inspiration and practical learning for other towns and regions looking to follow a similar path.

5.2.5.2 Organization & Activities of HE

The CERM is organized around an inclusive, cooperative model that brings together municipal officials, technical experts, local activists, and citizens. Its core governance rests with an association composed of volunteer members, many of whom were previously active in a local ecological consumption group called *La Olla del Patio*. Formal oversight is provided by an assembly that convenes regularly, ensuring that major decisions—such as expanding solar capacity or engaging new partners—reflect a collective will.



On the municipal side, the Monachil Town Council supports CERM through its OME. Originally established to guide the community on energy conservation, the OME now functions as a hub for facilitating cooperative projects and maintaining regulatory compliance. Notably, the Council granted access to a municipal rooftop for the community's initial solar photovoltaic installation, signalling official endorsement for citizen-led energy ventures. Meanwhile, the Office of Social Transformation—jointly run by *Cooperase* and *PASOS Participación*—offers supplemental guidance and outreach, helping residents understand collective self-consumption and the operational details of shared installations.

Activities within CERM primarily revolve around the production, sharing, and efficient use of renewable energy. Members pool financial resources or secure external grants—for instance, from *SOM Energía's* “Germinador Social” prize—to install and maintain photovoltaic systems. Electricity generated from these arrays is shared among participants, each receiving a proportional allocation that offsets their monthly utility bills. Beyond energy provision, CERM hosts training sessions on energy-saving measures, organizes educational workshops in local schools, and assists vulnerable households with energy audits.

The community's emphasis on peer-to-peer learning fosters a collaborative spirit, ensuring new participants can easily navigate the technical, legal, and financial aspects of joining. As part of its broader commitment to local sustainability, CERM has also explored projects like electric mobility initiatives and building retrofits. Members regularly meet to discuss ways of expanding their network beyond Monachil into neighboring municipalities, sharing best practices with other fledgling energy communities. By continually refining its structure and initiatives, CERM stands as a living demonstration of how grassroots organization, municipal backing, and cooperative values can merge to advance renewable energy and social cohesion at a local level.

5.2.5.3 Goals & intended Outcomes of HE

The CERM sets out to achieve more than lower utility bills; its overarching goal is to promote collective empowerment, local sustainability, and meaningful responses to climate change. From the outset, members recognized that surging electricity prices were merely one symptom of a broader challenge: the need for cleaner, fairer energy systems managed by and for the community itself. CERM's foundational aim, therefore, is to unite neighbors around shared renewable infrastructure—initially through solar photovoltaic installations—and to demonstrate that residents can produce and consume energy collaboratively.

A core objective involves strengthening social bonds and fostering a sense of ownership. By actively participating in energy decision-making—whether through general assemblies or working groups—local citizens take on a proactive role in shaping the initiative's direction. This approach not only helps reduce dependence on large utilities but also nurtures collective skills in project management and governance. In the long run, CERM envisions a shift toward expanded services, including e-mobility solutions and building retrofits, further reducing the municipality's carbon footprint.

Equity and inclusion also drive CERM's priorities. Organizers strive to make clean energy affordable and accessible to all households, regardless of income level. By pooling resources and securing external funding, the community can extend shared solar benefits to residents who might otherwise be unable to invest in individual systems. This solidarity-based model underscores a commitment to social cohesion and resilience.

Beyond the boundaries of Monachil, CERM looks to scale its impact by providing guidance to neighboring municipalities, encouraging them to adopt similar grassroots structures. This outward focus amplifies the project's ability to address climate challenges on a broader regional level. Taken together, these goals underscore a future in which local communities hold greater influence over their own energy destinies—while building stronger, more sustainable networks in the process.

5.2.5.4 A multilevel perspective on the CAI using the MLP visualization

Figure 5.2.11 shows the MLP visualization of the HE “Monachil River Energy Community (ES)”. From a multilevel perspective, the Energy Community in the rural municipality of Monachil illustrates how grassroots initiatives can challenge and partially reshape a socio-technical regime under broader landscape pressures—such as rising electricity prices and EU directives favoring renewable energy. In this example, the main concern centered on high household electricity costs and the desire for greater local autonomy in energy generation. Over time, civil society actors (including local associations like *La Olla del Patio*) mobilized alongside the OME to establish a shared photovoltaic installation, thereby reducing dependence on large utilities. Through this bottom-up effort, Monachil's residents reframed energy provision from a costly market service into a cooperative endeavor that aligns with environmental goals and community values.

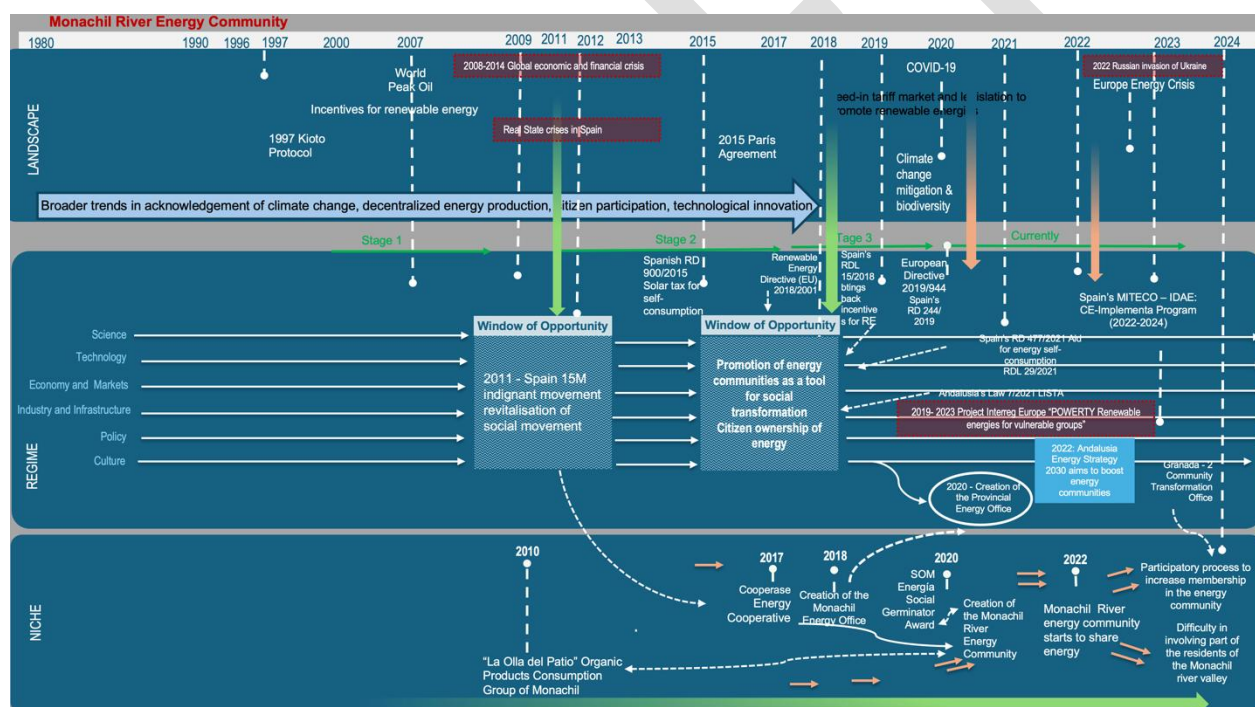


Figure 5.2.11: MLP visualization of the Energy Community in the Rural Municipality of Monachil, Spain

What kind of transition has occurred from a multi-level perspective?

At the landscape level, broad European and global imperatives have driven the shift toward decentralized renewable energy solutions. Rising electricity prices, the emphasis on climate targets across the EU, and legal instruments such as the European Renewable Energy Directive all exerted pressure on national energy systems. These external trends made community-driven energy initiatives not only more attractive but also more feasible.

At the regime level, Spain's centralized electricity sector, in which large utilities historically controlled generation and distribution, began to open avenues for community ownership and shared generation. Regulatory adjustments allowed collective self-consumption and energy sharing, responding to landscape pressures. However, regime actors, especially the main distribution company, sometimes delayed or complicated grid access for the local project. Despite such hurdles, the Monachil Town Council, via its OME, supported the emerging community energy approach by providing technical advice and public rooftops for solar panel installations.

The niche level is where the CERM took root. A local ecological consumer cooperative (*La Olla del Patio*) and engaged civil society organizations (*PASOS Participación, Cooperase*) initially championed the project. These grassroots groups already had experience with sustainability and collective action, enabling them to organize informational meetings, manage legal steps, and mobilize local residents. By prioritizing shared investments and renewable generation, the CERM established itself as a pioneering example of bottom-up innovation in the South of Spain.

How has this transition occurred?

The transition emerged as local actors seized an opportunity to address high electricity costs and environmental concerns. First, engaged residents formed a cooperative framework for shared photovoltaic installations. This process benefited from the municipality's practical support—chiefly in the form of the OME, which streamlined technical and administrative procedures. Winning a small grant from a broader renewable energy organization also provided initial funding and visibility.

Meanwhile, ongoing participation by motivated citizens cultivated trust and kept the project resilient in the face of regulatory and bureaucratic obstacles. Over time, members resolved early-stage technical challenges (such as waiting on the utility's grid-connection approvals) and extended outreach to new participants, including households lacking suitable rooftops or financial resources for their own installations. Although some members eventually withdrew—opting for individual solar solutions—CERM continues to refine its model, exploring new areas like building retrofits and electric mobility.

Overall, the CERM exemplifies how niche-level grassroots initiatives can alter a previously centralized regime when supported by favorable landscape forces and local government allies. By innovating collectively and tackling hurdles step by step, the community has contributed to an ongoing energy transition toward greater sustainability, local empowerment, and shared benefits.

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5.3 Przylesie Housing Community (PL)

5.3.1 Interviews

5.3.1.1 Documentation of the application of the method

Four relevant stakeholders have been interviewed between October 2024 and March 2025. Table 5.3.1 presents the details of their professional functions, organisations, regions, interview times and durations.

Table 5.3.1: Details on interviews

ID	Interviewee (position, function)	Investigated CAI	Interview time	Interview duration and type
PHC0	Board of the Przylesie HC in Sopot	Przylesie HC	October 2024	93 min – online
PHC1	Board of the Przylesie HC in Sopot	Przylesie HC	March 2025	58 min – online
PHC2	Supervisory Board of the Przylesie HC in Sopot	Przylesie HC	March 2025	52 min – online
PHC3	Supervisory Board of the Przylesie HC in Sopot	Przylesie HC	March 2025	62 min – online

5.3.1.2 Results

The interviews provided key insights into the factors responsible for the emergence of the CAI and the trajectory of its development, taking into account the dynamics of the relationship with social actors at the niche and regime levels, as well as the outcomes of the initiative.

How and why did the initiative come about?

The transformation initiative at the Przylesie Housing Community (Przylesie HC) was born out of a critical need to solve the problem of the housing cooperative's severely neglected infrastructure and improve the living conditions of its residents. The cooperative struggled with many problems, including an outdated and polluting heating system, inefficient elevators, inefficient lighting in the park, and old window frames. The Przylesie HC's financial situation was also difficult.

The initial impetus for change was the terrible condition of the cooperative's facilities. As one of the interviewees describes, *"We work here – the place had been neglected since 2007. And the cooperative was in a terrible condition. The high costs of maintaining the old infrastructure, such as the crazy prices of heating oil, additionally forced the change"* (PHC1).

An important driving force behind the initiative was the long-time president of the Przylesie HC. He was an engineer and his professional interest was related to water management and environmental protection in Sopot. The first actions of the new board of the Przylesie HC focused on stabilising the cooperative's finances and establishing basic operating procedures. The renovation fund was increased, which was initially met with resistance from residents. Over time, due to effective communication and visible

improvements, residents' trust and willingness to invest increased. External opportunities, such as available financing and subsidies for renewable energy sources and thermal modernisation projects, also played a significant role in shaping the direction of the initiative. For example, the cooperative's decision to invest in photovoltaics was motivated by the offer of subsidies from the municipality.

What kind of transformation was attempted, and how has the focus of the initiative changed over time?

The transformation undertaken by the Przylesie HC involved a comprehensive infrastructure modernisation, improvement in living standards of residents and increase of energy efficiency. The inclusion of renewable energy was a part of this process. The focus of the initiative evolved over time, starting from basic but crucial improvements and expanding to more ambitious projects focused on sustainable development. However, the fundamental imperative for action was the economic efficiency of the buildings and improving the economic performance of the community, as all interviewees unanimously emphasised.

Initially, the focus was on addressing the most urgent technical needs, such as replacing the outdated heating system. The heating system was changed from polluting coal-fired boilers to oil-fired boilers at the building level, and then, due to the high cost of oil, to gas-fired systems. Another early priority was improving the safety and functionality of the buildings, including a project to upgrade the lifts so that they would stop on each floor, which was a significant improvement for residents. As one of the interviewees noted, *"We converted them into 12-stop lifts, whereas before, they only stopped on every other floor... It was much more convenient for the residents. The residents (according to the Cooperative Board) probably trusted us too. It was a technically difficult project"* (PHC1).

The initiative then moved towards increasing the energy efficiency of the buildings by replacing old, leaky windows and undertaking deep thermal modernisation projects. A significant turning point and innovation in the area of collective housing was the installation of photovoltaic panels on the roofs of the buildings. This meant a step towards energy independence of the common areas of the buildings and was in line with the broader goals of sustainable development, although the initial motivation was strongly related to the available subsidies. One interviewee recalls: *"...we went to the National Fund (Regional Fund for Environmental Protection and Water Management) with an application for financing for thermal modernisation. We had resolutions with us, projects with photos [visualisations of new façades with balconies]. When we say what we want to do it in Sopot, we are met with great disbelief. But when we show that we have already started seriously – that we already have these photovoltaic installations and are working intensively – then we were trusted"* (PHC0).

Over time, the focus continued to be on improving the aesthetics and functionality of the estate, including replacing the park lighting with LED technology, renovating the entrances to the buildings (vestibules), redeveloping outdoor spaces, and creating a bicycle storage room equipped with charging facilities and electronic access cards.

Recently (2024–2025), the initiative has encountered internal political challenges that have slowed down or halted the implementation of new projects. Despite earlier successes, the focus has shifted somewhat towards overcoming internal conflicts and maintaining the improvements already achieved. The internal conflict concerns, among other things, the forms of collateral for investment loans and the amount of administrative rents, which can be interpreted to some extent as a sign of the niche's maturity, which directs HE to the path of consolidation and related struggles.

Does the initiative reflect its contribution from a sustainability/climate change perspective, and if so, how?

As mentioned above, the main drivers for the transformation were the need to improve the standard of living and increase the economic efficiency of the buildings. The climate effects can be considered as a parallel benefit. Although sustainable development was increasingly considered in projects, residents' support often focused on tangible benefits, such as greater comfort, aesthetics, and potential savings. As one of the interviewees noted, *"...the costs and benefits are rather emphasised, not that we are better for the climate... more the assessments that it is warmer, it looks nicer, more efficient, we have new large balconies – those are discussed, more the things that are fundamentally valuable to the residents"* (PHC3).

The cooperative has implemented several projects that directly address environmental concerns and promote energy efficiency, as evidenced by the following:

- **Transition from coal to gas heating:** In the early days, the cooperative switched from a heavily polluting coal-fired heating system to building-level oil-fired boiler systems. Subsequently, due to high oil prices, these were further replaced with gas-fired boiler systems. This change significantly reduced air pollution.
- **Investment in solar photovoltaic panels:** The Przylesie HC installed solar photovoltaic panels on the roofs of nine buildings in 2016. These panels generate electricity, which is directly consumed, and any surplus is sold to the grid. The cooperative has significantly expanded its photovoltaic capacity, covering 100% of the available roof space with 542 panels generating 135 kWp at peak. By 2023, these panels had generated 1000 MWh of electricity (PHC0).
- **Deep thermal modernisation:** The cooperative undertook a comprehensive thermal modernisation project. This included insulating buildings, replacing old windows, and addressing thermal bridges, such as those caused by old balconies, which were replaced. The main goal of thermal modernisation was to reduce heat loss and decrease energy consumption for heating, thereby lowering greenhouse gas emissions and energy costs for residents.

The cooperative replaced the old lighting in the park, which was in poor condition, and later converted all lighting to LED. More recently, the cooperative created a pocket park featuring rainwater harvesting and a reduction in concrete surfaces. This initiative demonstrates an awareness of sustainable urban development principles, addressing water conservation (rainwater tank) and reducing the urban heat island effect associated with large concrete areas. Worth noting is also the creation of new bicycle storage rooms with electronic access cards, monitoring, and e-bike charging points. Although not yet implemented, the cooperative has considered heat pumps as future heat sources. It is worth noting that many of these initiatives are innovative at the scale of Sopot and even the Tri-City agglomeration. Although they align with the emerging urban narratives, they are not typically the result of programmes initiated by the city administration.

How is the initiative's relation to mainstream society?

The Przylesie HC initiative has a complex relationship with mainstream society, marked by both strong leadership and instances of disconnect or friction.

The Przylesie HC has been recognised as a leader in its field, often featured in the professional press as an example of good practice in residential development (the president received an award for leadership in thermal modernisation). The Przylesie HC is often seen as a pioneering model for estate transformation

and is the focus of many study visits and meetings. This community has worked closely with the Sopot City Council, including its conservation officer and construction supervision.

The Przylesie HC has collaborated with various private companies for the execution of its projects, including elevator companies, window replacement firms, and energy companies. These collaborations sometimes involved novel solutions. Many partners—subcontractors, building officials, grant operators, and lenders—are undertaking activities in Przylesie for the first time, developing their know-how.

The cooperative's relationship with its residents is multifaceted. A significant challenge lies in convincing older residents to invest in long-term improvements when they perceive limited personal benefit. Newly arrived residents, while appreciating the modern look, sometimes question the higher maintenance fees without understanding the contexts of investments. The rise of social media has also amplified dissenting voices. Despite Przylesie's achievements, the Cooperative Board notes current difficulties due to internal divisions and a lack of trust among residents, hindering further initiatives. There is a recent mismatch in priorities and perspectives between the cooperative's leadership, long-term, and newly arrived residents.

5.3.2 Textual Analysis

5.3.2.1 *Documentation of the application of the method*

The textual analysis was based on a corpus of 17 diverse texts, including newspaper articles, reports from non-governmental organisations, government documents, and legal analyses. The selection of materials aimed to capture different perspectives on the development and environmental initiatives in the Przylesie HC and the broader municipality of Sopot. The methodology involved a systematic review of textual data, focusing on both manifest and latent content to identify dominant narratives, stakeholder representation, and underlying discursive strategies.

A key aspect of the analysis was the categorisation of texts according to their source and purpose. Official documents and municipal reports were examined to understand the self-representation of local authorities, while independent reports and news articles provided a counterbalance, offering external assessments of environmental and social policies. Particular attention was given to the language and framing used in these texts, especially with regard to sustainability, energy transition, and civic engagement.

The methodological approach also involved a comparative dimension, assessing how different sources portrayed the Przylesie HC's role within the broader urban and environmental context of Sopot. This included identifying recurring themes, such as investments in renewable energy, air quality improvements, and housing modernisation, while also noting the gaps in representation, particularly the absence of residents' perspectives in the discourse. Official air quality data confirm that Sopot maintains generally good atmospheric conditions compared to other Polish cities (Główny Inspektorat Ochrony Środowiska, 2025). To address this, future research should incorporate complementary sources such as social media discussions and local environmental monitoring data, where available. This could provide a more balanced interpretation of the discourse surrounding the Przylesie HC and its interaction with local governance mechanisms.

The demographic and economic context of Sopot also plays a role in shaping the narrative and priorities of local development, as illustrated by regional urban profiles (Urząd Statystyczny w Gdańsku, 2019; Urząd Statystyczny w Gdańsku, 2025).

5.3.2.2 Results

The analysis of the textual corpus revealed that the discourse on the Przylesie HC is primarily dominated by public sector voices, particularly the City of Sopot. Official communications emphasise the quality of life in the area, highlighting environmental investments such as air quality monitoring, thermal upgrades, and the deployment of renewable energy sources. The texts frequently present the Przylesie HC as an integral part of Sopot's broader strategy for sustainability and urban development, with a strong emphasis on municipally led initiatives. The narrative often adopts a promotional tone, highlighting the benefits of investments while downplaying or omitting critical perspectives.

A significant portion of the corpus includes self-representations by the leadership of the Przylesie HC, positioning the area as a successful example of local environmental and economic transformation. These texts focus on measurable benefits, particularly regarding energy efficiency and cost reduction. In this context, statistical reports note that forest cover and green areas remain a defining feature of Sopot's landscape, providing a natural buffer that enhances environmental quality (Główny Urząd Statystyczny, 2023). Additionally, some documents reference the importance of civic engagement in urban development; however, this theme is not strongly supported by empirical data from other sources. External evaluations, including reports from independent environmental organisations, provide a more balanced perspective by objectively assessing air quality and living conditions in Sopot. However, these documents are not prevalent in the analysed corpus of texts.

The above analysis was aimed at capturing explicit (manifest) content, that is, content that is consistent with the intentions of the senders. However, it is necessary to refer to the content not directly expressed in the selected corpus of texts. Such hidden (latent) elements of discourse can include the structure of the community's debt at different stages of investment. Although the problem of debt is present in coverage in the expert press, it does not appear in the discussions among residents. It is known that debts existed, but the research did not provide the answer to how they are being repaid. The level of legitimacy of activities at different stages also remains unknown, as there are no critical voices of community residents. Although individual stakeholders are present in the described discourse, their representation may be overestimated in relation to their influence on the various processes. This means that, based on the textual analysis, it is difficult to describe the degree of inclusiveness of the process and to evaluate the participation model embedded within it. Local narratives point to a participatory model of governance, but they do not indicate whether civic engagement extends decision-making processes.

Main Conclusions

The dominance of public sector narratives in the textual corpus suggests a top-down approach to communication in which municipal authorities shape the discourse on environmental quality and urban development in the Przylesie HC. While the official representation of the area emphasises sustainability and quality of life improvements, there is a notable absence of diverse perspectives, particularly from residents and visitors. The limited presence of critical viewpoints or alternative narratives raises concerns regarding the comprehensiveness of the discourse and suggests a need for broader stakeholder engagement.

The cooperative board of the Przylesie HC aligns closely with the City of Sopot's overall communication strategy, creating a unified but potentially one-dimensional image of urban progress. This coherence contributes to a perception of strategic consistency but may also obscure underlying challenges or dissenting opinions. The textual analysis highlights the necessity of incorporating more heterogeneous

sources, such as community feedback and independent studies, to achieve a more comprehensive understanding of the area's transformation. Future research should integrate qualitative and quantitative assessments from a wider range of stakeholders to ensure a more nuanced and authentic representation of the Przylesie HC's environmental and social dynamics.

5.3.3 Social Network Analysis

5.3.3.1 Documentation of the application of the method

Initial data for the reconstruction of the social networks describing the linkages between key stakeholders within the Przylesie HC case study were first collected at the preparatory stage, based on a diverse set of information from available media releases and interviews with members of the Management Board of the Przylesie HC (SH6). The results of these analyses can be found in Deliverable 1.2, Context and Stakeholder Analysis for Historical Examples of Political Participation.

At the next stage, the social network analysis was refined and supplemented with additional information obtained from the text analysis and further interviews with stakeholders associated with CAI (members of the Supervisory Board of the Przylesie HC (SH5)). Participants involved in this stage of the analysis were able to assess and edit previous iterations of the SA analysis.

5.3.3.2 Results

Analysing the diagram covering stakeholders categorised as niche representatives (Figure 5.3.1), one can see a well reproduced management and control structure of the housing cooperative. A triangle based on the HC Management Board (SH6), HC Supervisory Board (SH5) and HC General Assembly (SH15) is also the central element of decision-making and control in Przylesie HC. This structure results from the system of housing cooperatives, which is regulated by law (Law of 16 September 1982 – Cooperative Law) and is the basis of its democratic regime.

Since, as it was concluded, most of the decisions on conducting investments in renewable energy sources (RES) were initiated by the President of the cooperative Przylesie HC, the Management Board (SH6) is also the central node, and to it leads the most relations also on the niche diagram and has the greatest power (visualised by the size of the pictogram on the diagram).

Key to understanding the diagram are the residents of the Przylesie housing estate, who are the formal members here and who are the majority owners of the dwellings. Here, as suggested by the interviewees (during in-depth interview, IDI), three groups of residents were distinguished: (1) Old residents (SH13), who moved in the 1970s and 1980s and acquired ownership after the political transformation. (2) New residents (SH12) who moved in over the last 25 years. These are persons who: (A) acquired the property and live in it, (B) acquired the property and rent it (also short-term), (C) rent for a longer term and live in it (the rarest variant). In addition, this analysis identified a small group of residents who are active on social media (3) (SH4).

The latter currently constitute opposition in the political sense and are in a conflictual relationship with the Przylesie HC Board (SH6). These people often question investment decisions and negate the way the community is managed. However, at the time of writing this report, they do not have a majority in the General Assembly (SH15).

An important but hidden (less intense) antagonism was also identified in the relationship between new (SH12) and old residents (SH13). As suggested by the interviewees, people who have been living there for

a longer period of time are less interested in the fast pace of modernisation, and their priority is low housing costs. Debt service resulting from investments (thermal modernisation and renewable energy sources) is more accepted by new residents. According to the interviewees, this group tolerates the nuisances related to the implementation of investments (e.g. noise) better. A decade ago, a group of elderly residents was supported by a residents' rights organisation (SH11). Currently, this stakeholder is no longer active.

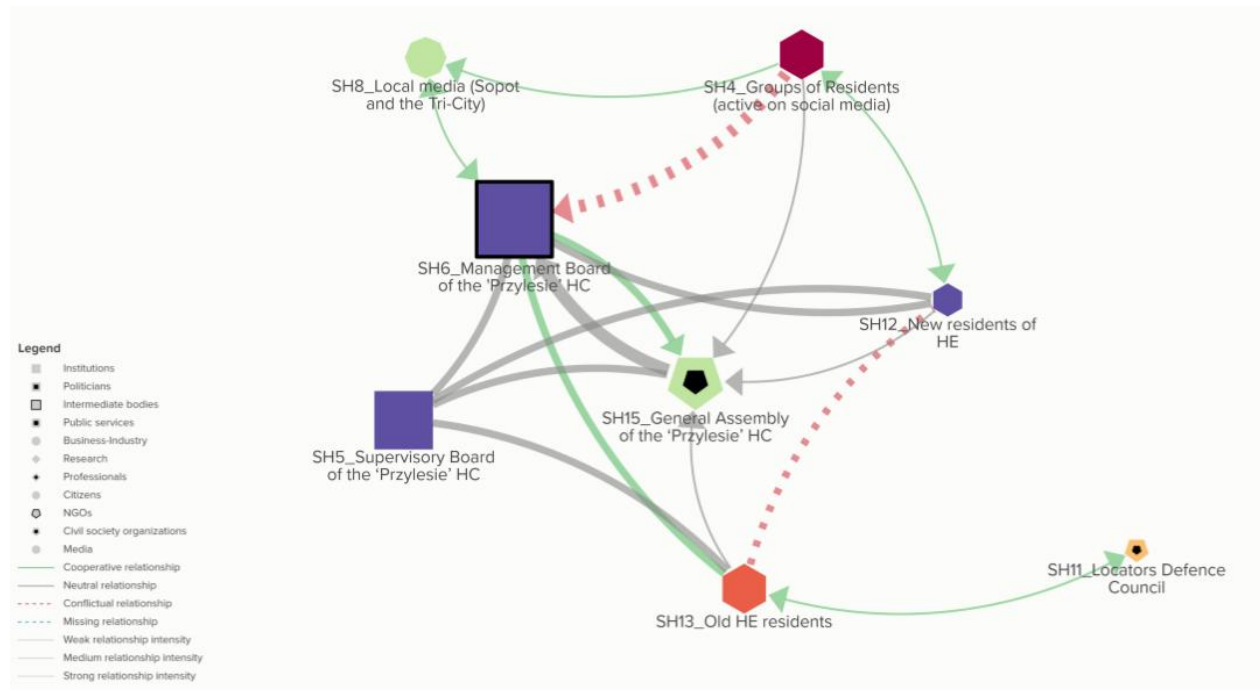


Figure 5.3.1: Network mapping: Przylesie HC initiative at a niche level, Poland

As we can see at the regime level (see Figure 5.3.1), the number of stakeholders is smaller and much less interconnected. The interpretation of this dimension of the MLP is therefore not of central importance to the objectives of the SNA. At the regime level, fewer stakeholders were mapped, and their relevance to CAI becomes apparent only when the analysis includes the niche level as well.

However, it should be pointed out that the actors identified belong to four different regime types: (1) cultural (Historic Monuments Conservator and Professional press – SH7), (2) industry and infrastructure (District Heating Company – SH10 and District Building Control Inspectorate - SH15), (3) policy (Voivodeship Fund of Environmental Protection - SH1 and City Council - SH3), and (4) technology (Contractors and subcontractors – SH16 and Auditing Company – SH9).

Only the Voivodeship Fund of Environmental Protection (SH1), which has the highest power, impact and interest, is a key actor in the entire Przylesie HC network. This institution is responsible for deciding on grants and investment loans. It is also where most projects were consulted.

The only relationship that has been established here in terms of activities related to Przylesie HC investments is between the City Council of Sopot (SH3) and the district heating company (SH10), which is dependent on its resolutions. The Monument Preservation Office (SH2), which opines on some investment activities, is also indirectly connected with the decisions of the Sopot City Council.

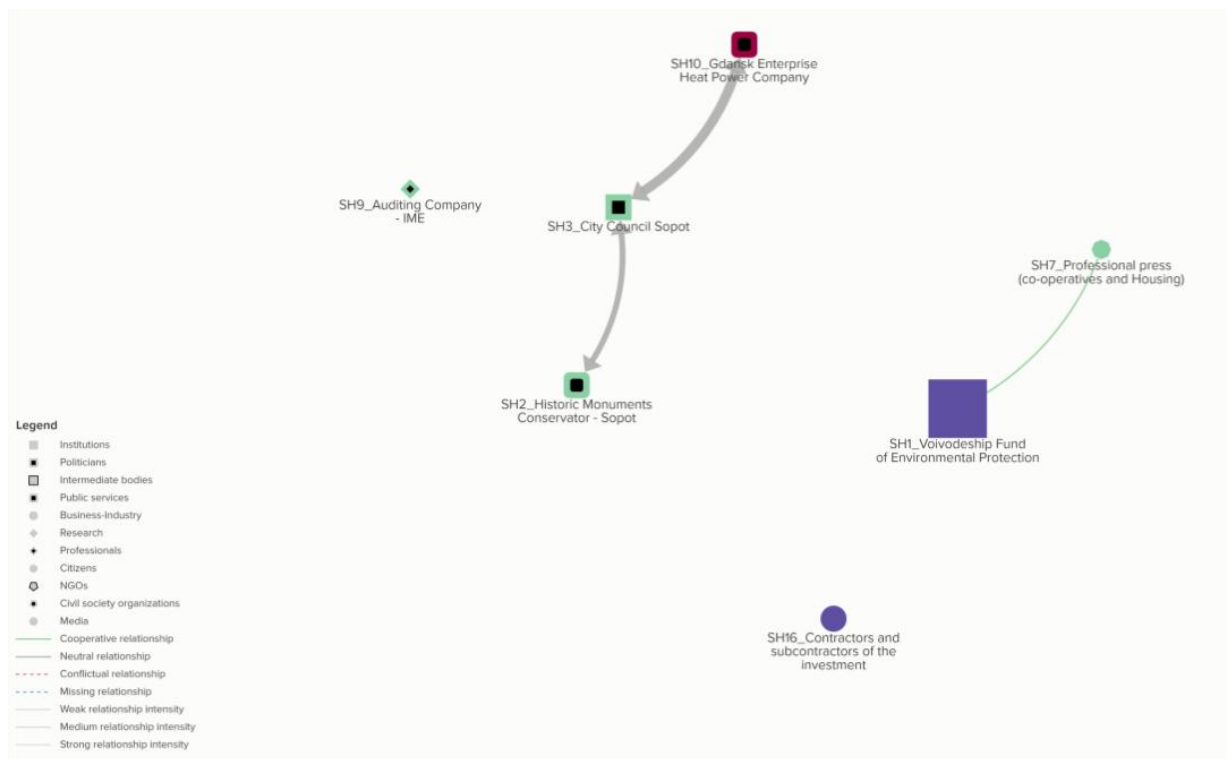


Figure 5.3.2: Network mapping: Przylesie HC initiative at a regime level, Poland

Figure 5.3.2 presents a diagram integrating both niche and regime actors. The resulting map suggests that there are two dominant actors: The two-man board of Przylesie HC (SH6) and the Voivodeship Fund for Environmental Protection (SH1). They have the greatest power and impact, and their relationship is a two-way collaboration.

The former (SH6), by making pioneering investments, provides a testing ground for new policies and acts as a frontrunner in the transformation of buildings constructed in the 1970s. The latter (SH1) allows for funding – through loans, targeted grants, and other financial instruments – to drive the transformation process.

What is also apparent is the lack of connections (relationships) between regime and niche actors. The intermediary link between these two types of actors is usually the SH6 – the Management Board of the Przylesie HC. This suggests that the burden of transformation rests on this actor.

The activity of the residents is limited to the legitimising or delegitimising of these activities, which raises the question of to what extent the Przylesie HC is a grassroots movement.

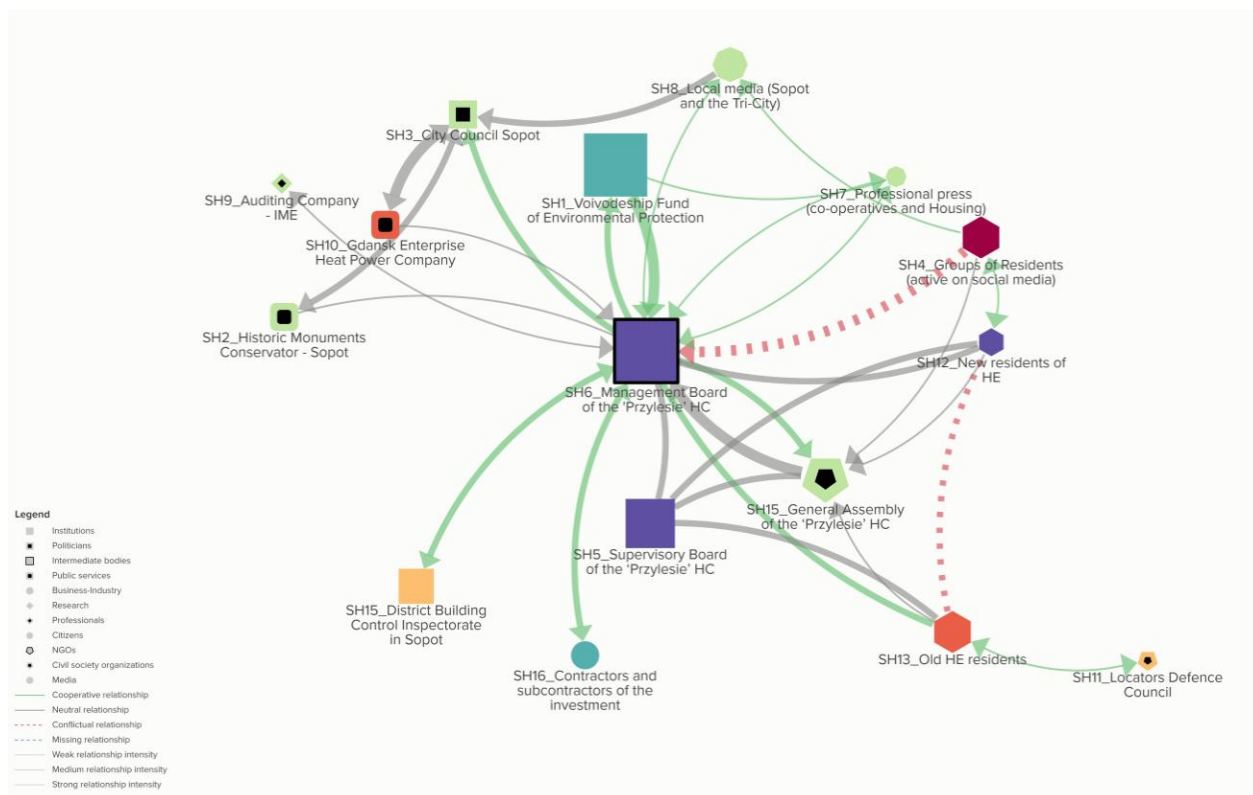


Figure 5.3.3: Network mapping of interactions: niche and regime actors, Przylesie HC, Poland

5.3.4 System Mapping

5.3.4.1 Documentation of the application of the method

The Causal Loop Diagrams (CLDs) presented below for Przylesie HC were created based on the data and insights gathered from the text analysis and in-depth interviews (IDI). The analysis successfully identified the main factors affecting the processes that shape the Przylesie HC at both the niche and regime levels, allowing for the reconstruction of the relationships between them. The outcome of this analytical effort was the development of diagrams that illustrate the causal connections and relational dynamics among essential factors within a complex system at both the niche and regime levels, as well as the interactions between these levels. The landscape level was not incorporated into the Przylesie HC model. Regarding CLDs, the interviewed stakeholders did not have the opportunity to examine predetermined diagrams, as they did for the SNA and MLP.

5.3.4.2 Results

Regime level

Pattern of key factors at the regime level

The main variable determining the dynamics for a system such as Przylesie HC is the fluctuation in electricity prices. As can be seen in the diagram below (see Pattern 1), in recent years there has been a significant increase in electricity prices for households. This is particularly evident in the average prices recorded in 2023, which are a consequence of the crisis in the energy markets caused by the sanctions imposed on Russia. Looking at the data collected in Figure 5.3.4, it should be added that these refer to

average electricity rates for households, including energy consumption, operation charges, distribution charges, taxes, and other components (e.g., capacity fee).

Importantly, 2023 and 2024 are also the years of the largest energy cost subsidies, introduced in the form of electricity price caps for end consumers. The difference between the maximum market price and the regulated tariff price are compensated from the state budget. It should be added that while price freezes can increase the profitability of RES projects by lowering the cost of electricity generation, they may also lead to a situation where RES electricity prices are lower than generation costs, which creates risks for investors.

Although the funding streams for electricity tariffs and measures for RES market development and thermal modernisation come from different sources, it should be assumed through a systemic approach that these financial objectives are competitive with each other. This relationship is potentially important not only at the macro level but also at the level of the Przylesie HC itself. High electricity prices increase the profitability of investments in renewable energy sources (RES) and thermal modernisation.

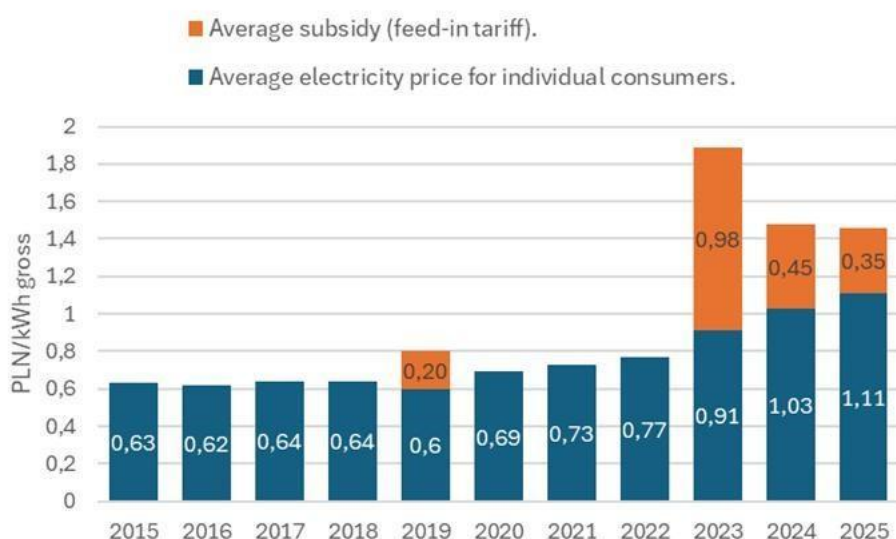


Figure 5.3.4 Pattern 1: Average electricity prices for households (G11 tariff without PV) in Poland
Source: Own elaboration based on WysokieNapiecie.pl (2024).

Dynamics at the regime level

The key dynamics associated with CLD for the regime in Przylesie HC appear to be centred around energy prices and the social and political responses to them.

Increased energy prices may lead to increased pressure from citizens on politicians to take action. This pressure may manifest in demands for energy price subsidies to ease the financial burden on households. However, the introduction of such subsidies can create a balancing feedback loop (R1) that may inadvertently impede long-term sustainability goals. While subsidies provide immediate relief, they can also reduce the economic incentive for households to reduce electricity consumption and invest in thermal modernisation and RES installations.

On the other hand, citizen pressure may also prompt politicians to increase retrofit funds (subsidies for thermal upgrades and RES installations). Increasing these funds can directly affect the scale of investment in RES and thermal modernisation. A greater scale of investment in these areas has the potential to reduce electricity consumption by the household sector and, over time, could contribute to stabilising or even lowering electricity prices in the market by reducing demand. This creates a reinforcing feedback loop (B1) toward a more sustainable energy system.

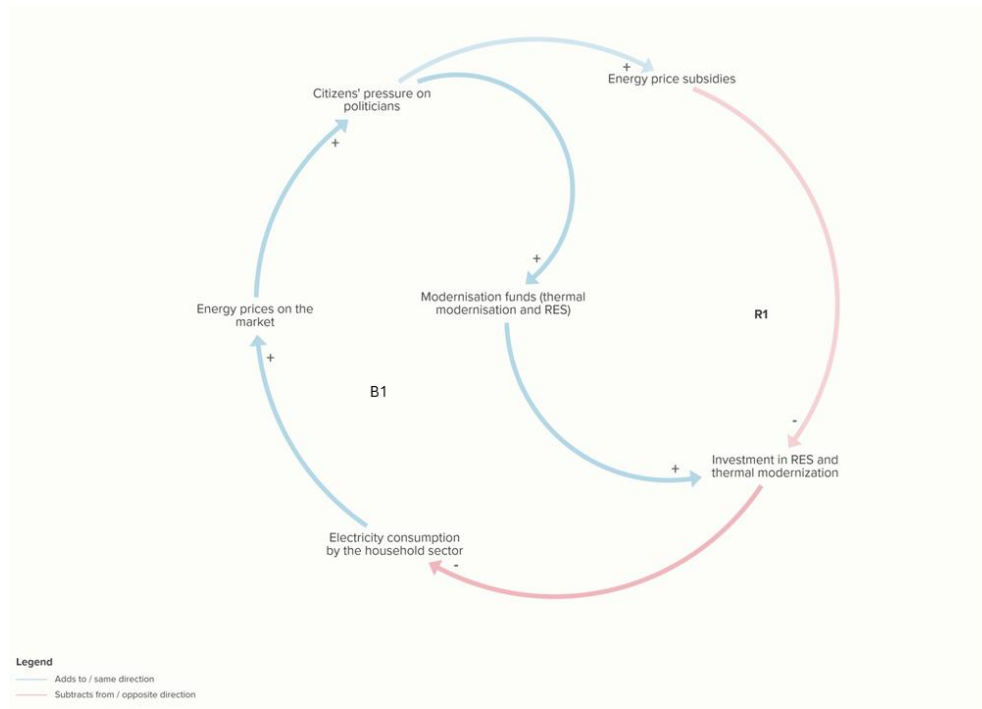


Figure 5.3.5: Causal Loop Diagram 1 Basic dynamics of Przylesie HC at the regime level
[Link to Kumu with CLD \(Przylesie HC regime level\)](#)

Niche level

Patterns of key factors at niche level

Sopot is one of the most important seaside resorts in Poland. Moreover, it is part of the Tricity agglomeration, which makes it a very attractive place both to live and to invest in real estate. Sopot is at the forefront of cities with the most expensive flats in Poland. This, together with a rather moderately dynamic labour market (e.g. in comparison with Warsaw, Wrocław or Kraków), makes the cost of living there above average.

Looking at the graph of housing price dynamics (see Figure 5.3.6), it can be seen that the upward trend has remained uninterrupted since 2018. The growth dynamics were particularly high at the turn of 2021 and 2022. However, decreases in transaction prices on the secondary market are visible from the end of October 2022. This short downward trend is co-occurring with the period of the largest increases in energy prices.

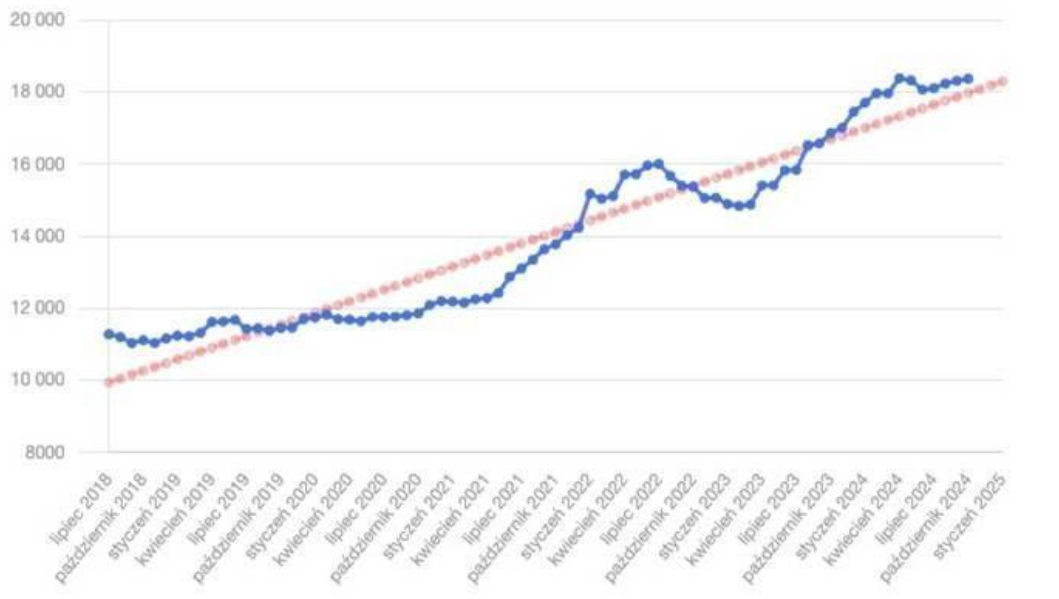


Figure 5.3.6: Pattern 2 Dynamics of apartment prices on the secondary market in Sopot
Source: Fxmag (2025)

Dynamics at the niche level

The CLD for Przylesie HC focuses on the residential community and revolves around the interdependence between community resources, individual and collective expectations, and local efforts to improve energy efficiency. The central dynamic at this level is the relationship between the amount of residential community savings (the HC's investment and renovation budget) and the scale of investment in RES and thermal upgrading.

R2: Greater savings by the housing association can provide the necessary capital for greater local investment in renewable energy and energy efficiency improvements in housing. These investments, in turn, can lead to higher levels of energy efficiency and lower energy expenditure in the shared areas of the housing cooperative. Successful energy efficiency improvements may contribute to residents' positive expectations of rent reduction (stable rent). This expectation, if not met, may again reduce the investment budget of the cooperative and reduce the investment rate. This, combined with rising energy prices, will maintain high energy bills for shared areas. The variable reversing the polarity of this loop is, in turn, the expectation of residents to continue the investment programme in RES.

R1: This is a separate loop incorporating the dynamics of supply and demand in the secondary property market and the value of owned property. Increased investment in RES and thermal upgrading, along with improved energy efficiency, increase the market value of flats. More attractive dwellings may find new owners or tenants more easily. This can lead to an increase in the share of new residents. During the IDI interviews, it was found that new residents are more willing to continue investing in RES and thermal upgrades.

In summary, the niche-level dynamics in Przylesie HC appear to be driven by a combination of available financial resources (community savings), tangible results of investments in sustainability (energy

efficiency, energy spending), and residents' collective expectations and perceptions (expectation of rent reduction, continued investment, and increased property values).

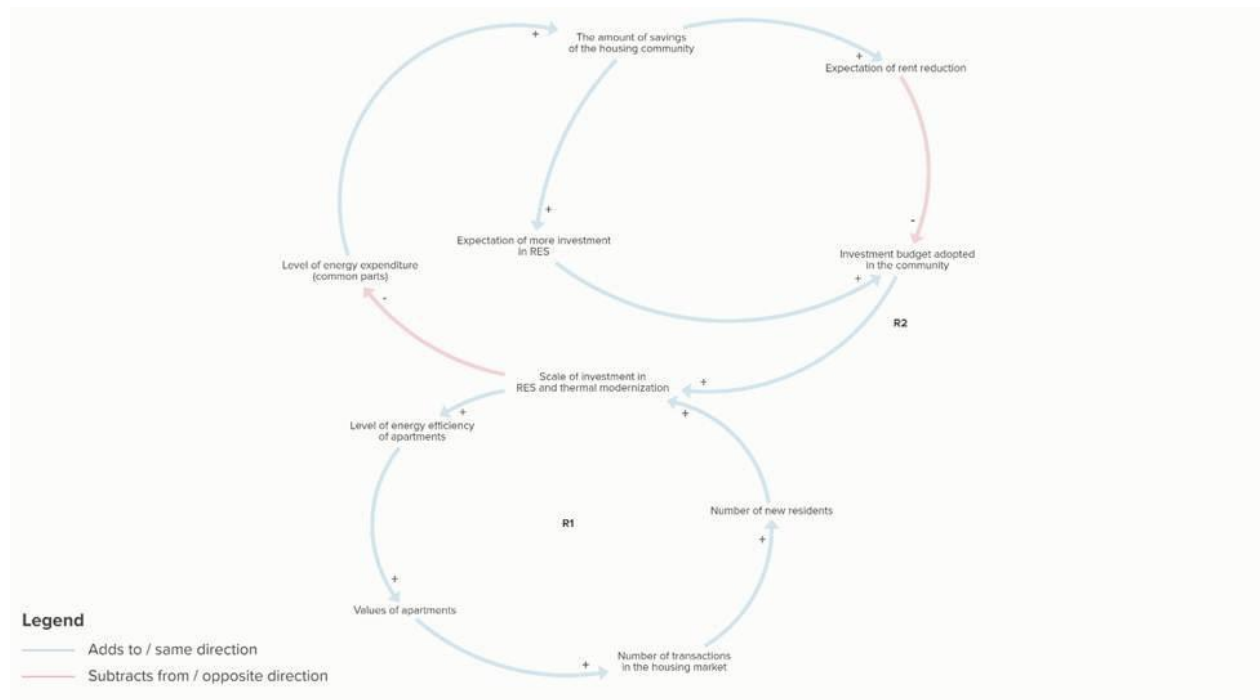


Figure 5.3.7: Causal Loop Diagram 2 Basic dynamics of the Przylesie HC at the niche level
[Link to Kumu with CLD \(Przylesie HC niche level\)](#)

5.3.5 Summary and Conclusion

5.3.5.1 Origin & Evolution of HE

The initiative at the Przylesie Housing Cooperative was born out of a critical need to address severely neglected infrastructure and improve residents' living conditions. In the early 2000s, the cooperative's facilities were in poor condition, characterised by an outdated and polluting heating system, inefficient elevators and low thermal efficiency ratios. The financial situation was also difficult. High costs associated with maintaining the old infrastructure, such as expensive fuel oil, were an additional driving force for change. The initial impetus for the transformation, therefore, lay in solving pressing technical and economic problems associated with the poor condition of the buildings and facilities.

The new management's initial efforts focused on stabilising the cooperative's finances, including increasing the renovation fund, which initially met with opposition from residents. However, thanks to effective communication and visible improvements, residents' confidence and willingness to invest gradually increased. External support (financial and technological) also played a key role in shaping the direction of the initiative. Although the changes were based on the strong leadership of the board of directors, all investment decisions were voted on by the general assembly of members each time.

The focus of the Przylesie HC initiative has evolved over time, moving from basic, urgent improvements to more ambitious projects focused on sustainability and energy efficiency. Improving safety and functionality was also an early goal, as exemplified by a project to upgrade the elevators to stop at each floor, which greatly increased convenience for residents and helped build trust with the board. The

initiative then shifted to increasing energy efficiency through deep thermal upgrades, which included insulating buildings, replacing old windows and addressing thermal bridges.

A notable turning point was the installation of photovoltaic panels, an innovation in collective housing in the region and a step towards energy independence for common areas, though initially driven by the availability of subsidies. Over time, the focus has expanded to improving the aesthetics and functionality of the estate, including LED park lighting, renovating building entrances, remodeling outdoor spaces and creating modern bicycle storage facilities. More recently, internal political challenges over the security of investment loans and administrative fees have emerged, slowing or halting new projects and shifting the focus to overcoming conflicts.

5.3.5.2 Organization & Activities of HE

The Przylesie HC organisation is structured around a well-defined management and control system dictated by Polish cooperative law. The central decision-making and control elements in the cooperative are the HC Management Board, the HC Supervisory Board and the HC General Assembly. The Management Board, in particular, has been the central node, initiating most decisions regarding investments in renewable energy sources. This actor has the most power in the niche network structure.

The main stakeholders at the niche level are residents, who are the formal members and majority owners of the apartments. The analysis distinguishes between three main groups of residents: “Old residents” who moved in earlier (1970s and 1980s) and acquired ownership after the political transition; “New residents” who moved in within the last 25 years, comprising owners (both residents and non-residents/tenants) and long-term renters; and a smaller group of “residents active on social media.” The latter group is now the political opposition, often challenging investment decisions and management practices. There is an implicit tension between new and old residents, with older residents less interested in rapid modernisation and prioritising low housing costs, while new residents are generally more tolerant of investment debt and inconveniences due to renovation.

The Regional Fund for Environmental Protection and Water is identified as a key actor at the regime level, with the most power, influence and interest, as it is responsible for grants and loans and has been an institutional consultant for most projects. At the regime level, less visible actors associated with the Municipality of Sopot include bodies such as the Historic Preservation Officer, the County Building Inspectorate, and the District Heating Company. Also visible in the analysis are the professional press, technological actors such as contractors and subcontractors, and external auditors.

The Przylesie HC Board acts as the main link between niche and regime actors, suggesting that the burden of transformation is largely on this body. Residents' activism is mainly limited to legitimising or delegitimising these actions through the General Assembly.

Based on the analysis above, the relationship between the Przylesie HC initiative and mainstream society is limited to flows of know-how. The cooperative has been recognised as a leader and an example of good practice, receiving awards and being the subject of study visits. It has worked closely with the Sopot City Council and various private companies to implement the project. Many of the partners involved have gained new know-how from working with the cooperative.

5.3.5.3 Goals & intended Outcomes of HE

The main and initially stated goals of the transformation of the Przylesie HC stemmed from the critical need to address severely neglected infrastructure, improve residents' living conditions, and stabilise the

cooperative's difficult financial situation (it is described in detail in the introduction to the Textual Analysis). Sustainability and climate change considerations did appear in the messages analysed. However, climate impacts are seen as a parallel benefit rather than a primary goal.

Residents' support for the initiatives focused primarily on tangible benefits that directly affect their daily lives. These include increased comfort resulting from improved heating systems and thermal upgrades, improved aesthetics of renovated buildings and outdoor spaces, increased efficiency due to upgraded infrastructure, and visible improvements such as new balconies.

Successful investments also aim to increase the market value of apartments, making them more attractive on the housing market. For the cooperative's management, goals also include achieving energy independence of the common areas. For external stakeholders, such as the Provincial Environmental Protection Fund, Przylesie HC's pioneering investments provide a "testing ground" for new policies and programs to transform buildings whose construction spans back to the 1970s. Przylesie HC's pioneering efforts have also provided important experience for contractors and subcontractors of individual upgrades.

The dynamics at the regime level indicate that civic pressure, potentially driven by rising energy prices, can influence politicians to increase funding for retrofits, which directly affects the scale of investment in RES and thermal modernisation, with the intended long-term outcome of reduced electricity consumption and potential stabilisation of energy costs.

The textual analysis underscores that the prevailing narratives, particularly from the City of Sopot, emphasise quality of life and present the Przylesie HC as an integral part of Sopot's broader strategy for sustainable development and urban growth. The lack of direct access to residents' critical voices in the discourse makes it difficult to assess the degree of inclusivity and evaluate the embedded participation model based solely on the analysis conducted (TA/IDI). Although civic engagement is cited in some documents, it is not strongly supported by empirical data from other sources. Analysis of social networks indicates that citizen activism is mainly limited to legitimising or delegitimising, which raises questions about the grassroots nature of the initiative.

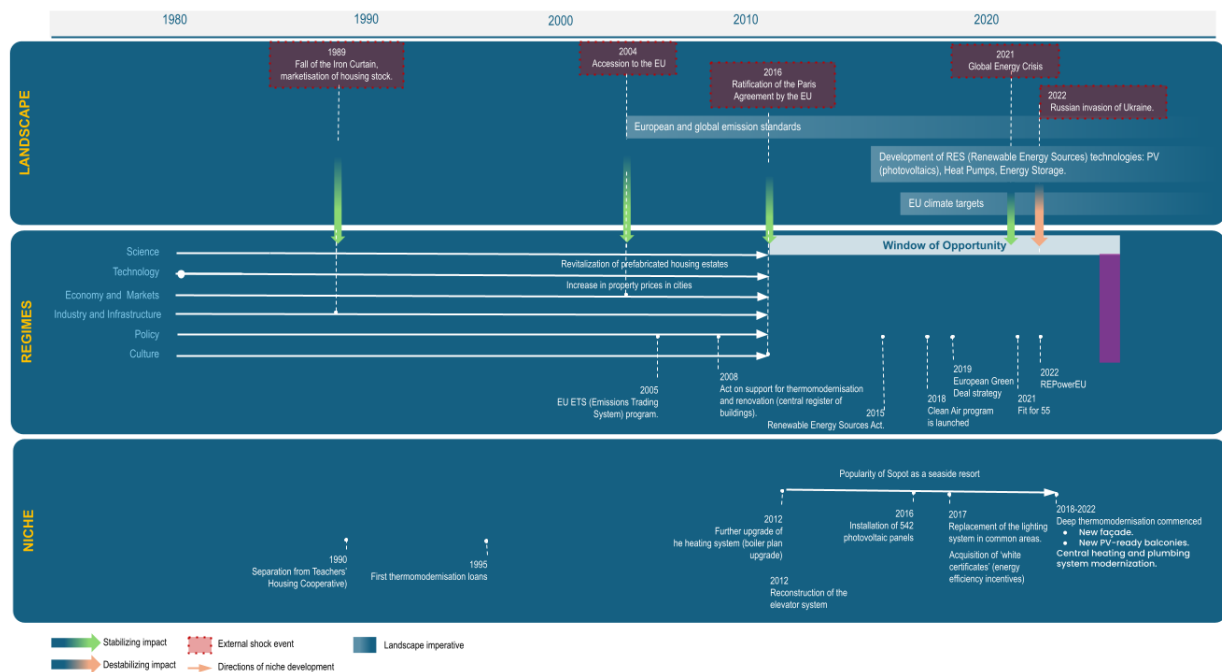


Figure 5.3.8: A multilevel perspective on the CAI using the MLP visualization

5.3.6 References

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5.4 Urban Gardening communities in the city of Tartu (EE)

5.4.1 Interview Analysis (IA)

5.4.1.1 Documentation of application of the method

The interviews were conducted between May and November 2024. The interviewees included core actors from both CAIs, Emajõe Garden and Eco Garden. Both gardens are central to the urban gardening niche in Tartu. Among these stakeholders are the founders and (co-)leaders, the supporters, as well as the representatives from the City of Tartu. Table 5.4.1 shows an overview of the sampling.

Table 5.4.1: List of interviews

Nr	Interviewee (position, function)	Investigated CAI (organization, country)	Interview time	Interview duration and type
1	Co-leader of the CAI	Tartu Eco Garden, Estonia	November 2024	55 min, in-person
2	CAI founder and CAI co-leader	Tartu Eco Garden, Estonia	June 2024	1h 36 min, in-person (two interviewees)
3	CAI early-stage supporter (scientific regime)	Tartu Eco Garden, Estonia	September 2024	52 min, in-person
4	CAI supporter (environmental education)	Tartu Eco and Emajõe Garden, Estonia	September 2024	47 min, in-person
5	CAI leader and CAI co-leader	Tartu Emajõe Garden, Estonia	May 2024	1h 45 min, in-person (two interviewees)
6	City official setting the context for the CAI	Tartu Eco and Emajõe Garden, Estonia	September 2024	45 min, virtual
7	CAI founders and former leaders	Tartu Emajõe Garden, Estonia	August 2024	59 min, in-person (two interviewees)
8	CAI founder and former leader	Tartu Emajõe Garden, Estonia	August 2024	59 min, in-person
9	Gardener	Tartu Eco Garden	October 2024	1h, virtual
10	CAI founder and former leader	Tartu Emajõe Garden	July 2024	40 min, virtual

5.4.1.2 Results

How and why did the initiative come about? What kind of transformation was attempted, and how has the focus of the initiative changed over time?

On the **landscape level**, for Tartu Eco Garden, the founding of the CAI was framed by the 1) **global financial crisis** starting in 2008, during which the founder of the CAI lost his job, which motivated him to start the

communal garden as a way for him and others to spend time usefully and save money. Another development influencing the founding of the CAI was the 2) **(sub)urbanization trend** and land privatization since Estonia regained independence in 1991. Against this backdrop, the idea to provide access to nature in the city, and land for people who do not own private gardens or summer houses, was central to the initiation of the CAIs. For Emajõe garden, 3) **increasing awareness of the climate and environmental crisis** also played an important role.

The **regime-level transformation** attempted by the CAI was 1) a **change in urban land uses**, to make space for gardening in the city next to other more common urban land uses such as real estate or retail, which was a central challenge for both gardens. Over time, Eco Garden has achieved more stability in land use than Emajõe Garden with longer term contracts and larger areas of land use. One step on the way was the 2) **reframing and re-legitimization of urban gardening**, which had been seen as obsolete after the end of the Soviet Union where widespread food self-provisioning practices were replaced by market provision, and parts of the former dacha gardens were demolished. Emajõe garden played a more visible role than Eco Garden in re-legitimizing gardening in the city, as they engaged in public discourse and actively co-organized a central conference on the topic (Food Urbanism Conference 2018). Another effort was the 3) **proliferation of organic gardening ideas and practices** against the backdrop of the industrialisation of agriculture and commercialization of food provision. The latter developments are seen as problematic by those engaged in urban gardens as they limit access to organic food and thereby impede human and environmental health. While Emajõe garden has successfully implemented permaculture practices, in Eco Garden, this remains controversial due to the diversity of gardeners, their knowledge and preferences, essentially resembling tensions between “new and old school” (permacultural versus “orderly”, weed-free) gardening practices. Eco Garden’s freshly produced garden food is, however, reaching Tartu’s residents more widely due to the initiation of garden produce sales. In addition to these efforts, Emajõe garden has attempted 4) to **proliferate sustainability and degrowth ideas more widely**.

Concerning the **niche-level organization to achieve this change**, for both gardens, the role of 1) **leadership** was important. For Eco Garden, it was the **stability** of the leadership that was central. The founder invested considerable time, enthusiasm and patience in initiating the garden, searching for suitable grounds, finding information on land ownership, negotiating with the city, preparing the land for garden use (several times due to relocations), managing the garden and relations with the city – partly with help, but always in the leading role. For Emajõe garden, the **wider leadership network** - people involved in several initiatives related to the urban gardening niche (e.g. the Repair Basement, the Transition Towns movement, the Permaculture Association) - was, and still is, central (although the central initial leaders have left, see section 5.4.3). Within this leadership network, strong internal communication, collective learning and horizontal expertise were crucial. Both gardens were initiated bottom-up: in Eco Garden, strongly influenced by one entrepreneurial leader, in Emajõe garden, by a small community of people. For both, the initiation from below felt empowering and has also been recognized from the outside (the Eco Garden founder has been nominated as Honorary Citizen of Tartu, for example). The work has nevertheless remained 100% voluntary even in more intensive times and, in both cases, also during the work-intensive relocations of the gardens. This has meant that the leaders have been overburdened over a long period. 2) **International knowledge and blueprints** for organizing urban gardens have been crucial. In the case of Eco Garden, these came through connections to experts from Tartu universities, in the case of Emajõe Garden, some of the founders came from abroad or had studied abroad. Finally, 3) **small scale experiments** were relevant. In Eco Garden, this took place on a small plot at the Estonian Life Science

University (to test both food safety - “the edibility of urban plants”, as well as different eco gardening practices); in Emajõe Garden, it came in the form of tactical urbanism, including initial guerrilla gardening tactics, which also coincided with the gradual rise of urban activism in Estonia in general (Kljamin et al. 2020).

In what way do sustainability objectives play a role for the aims and activities of the initiative; did they intend to have an influence on these fields? How does the initiative reflect its contribution from the point of view of sustainability / climate change?

Climate change was not central in the initial stage for the aims and motivations of the CAI. Yet, one shared background conviction was **sustainability**, as it aligns with many different values of the garden leaders and gardeners (organic and healthy food, permaculture and biodiversity enhancement, degrowth, community-building, affordability, equal access to nature etc.). A specific focus lies on **sustainable urban development**, e.g. to bring nature and food production to the city and advocating for alternative land use development instead of densification and sealing. The proliferation of **eco gardening ideals** has been central for both gardens (focusing more on organic and healthy food in Eco Garden and more on permaculture and biodiversity enhancement in Emajõe Garden).

In both gardens, the foci of the garden leaders do not necessarily align with the motivations and foci of the gardeners, some of whom are “simply” interested in food production, being in nature, having their own piece of land, and gardening approaches different from the ideals of eco gardening. The garden leaders try to **advocate approaches to gardening that link with sustainability** and for that, organise training, lectures and communication materials. The tangible influence of climate change offers reasons to address topics such as soil protection with permaculture measures. Externally, **environmental education** has been seen as a central benefit of these CAIs, and has initiated multiple collaborations with the city and its educational institutions.

In addition to sustainability objectives, **awareness of multiple crises** has influenced the aims and activities of the CAIs. For Eco Garden, the global financial crisis since 2008, the COVID pandemic since 2020, and the Ukraine war since 2022 have played a central role in forming the aims of the CAI to include **provision of affordable food, healthy ways of living, and food security**. For Emajõe Garden, the migration crisis led to a focus on **integrative community building** and a collaboration in the field of integration with the City of Tartu.

What makes this CAI a niche, e.g. does the CAI (niche) fulfil shielding or empowering function (Törnberg 2018)? How is the CAI’s relation to mainstream society?

Shielding functions: Both gardens provide shielding functions. Both, for example, function as spaces to develop **new collective identities as gardeners**, crossing socio-economic and cultural boundaries, offering opportunities to “*make friends among people you usually wouldn’t meet*” (interview 2) and, in Emajõe Garden in particular, also to try out new collaborative ways of decision-making and community-building (in the spirit of prefiguration). They also offer opportunities to **try out new social gardening practices**, especially permaculture and eco gardening practices, collective gardening practices, and reuse of materials for building. Experimenting with these practices does not come without tensions as described above in the case of eco gardening practices. As Eco Garden is laid out as an allotment garden, collective gardening practices have not been uncontroversial. Eco Garden in particular has also provided a **new ‘shelter’ for some of the gardeners whose dacha gardens were demolished** due to infrastructure development in

Tartu (the so-called ‘Chinatown war’, see MLP). They were offered new land and some degree of protection of gardening land in the form of long-term contracts. During Emajõe garden’s development (Aleksandri garden phase, see MLP), it has been focused more on **community-building** and communal forms of decision-making. Both gardens provide to some degree **protection from hegemonic ideologies and practices**, by offering space for food self-provisioning as an alternative to market-based food provision, places to experiment with alternatives to more conventional forms of gardening (e.g. permaculture and eco gardening).

However, during their development, **neither could “shield” (Törnberg 2018) the gardens and gardeners from several relocations** while fighting for making and consolidating gardening space in the city. Thus, there is a certain sense of being endangered by the ‘mainstream’ society in the form of developers and the city which could at any point take over the land and turn it into something different. People have seen over time *“how all these other gardens have been wiped off...replaced with parking lots...people lose their motivation [when this happens]...[it seems that] money is what matters...”* (interview 9).

Empowering functions: Both gardens hold empowering functions. The city government was not actively supporting the cause of either garden in the beginning. During the process of acquiring space and consolidating it over time in such a **context of little initial support**, the CAIs learned important skills of negotiating with the city government, gaining political goodwill and public support and joining forces via networking.

Both approached this challenge in different ways. While Emajõe Garden turned to guerrilla gardening tactics (‘first doing, then asking’), Eco Garden invested much time into advocating in the city government, hence it took ‘the official route’ to ask for permissions in advance. Emajõe Garden has invested substantial resources into advocating their topics to the public, even standing for office themselves (Green Party), founding support networks (Transition Town, Permaculture Association), thus seeking to put their ‘niche’ topics on the map (e.g. degrowth, food activism). Eco Garden has invested more resources into securing political goodwill and administrative support within the regime, which remained less visible to the public. While Eco Garden focused more on **empowerment to fit and to conform to** the existing regime, Emajõe Garden focused more on **transforming** the regime.

5.4.2 Textual Analysis (TA)

5.4.2.1 Documentation of application of the method

This analysis is based on a sample of 37 media articles published between 2011 and 2023. It included texts portraying the viewpoints of central stakeholders (see SNA), describing relevant turning points of the CAI’s development (see SM analysis) and/or changes in the niche/regime/landscape (see MLP analysis). For the media sphere, the sample is quite exhaustive of the general population of articles, excluding only those which repeated similar calls for actions or viewpoints over time (e.g. articles conveying the high interest of gardeners at the start of every new season, which keep repeating over time). There were no considerable problems with sampling as the CAIs figured repeatedly in public discourse over time, but were not overly present as to create an overwhelming the data. The public discourse was situated mainly in regional newspapers (Tartu Postimees) and more specific-interest national newspapers (Sirp, Mürileht), less so in national newspapers (e.g. Postimees). However, all newspapers are available online, hence potentially accessible also beyond the region. It was partly difficult to assign the actors according to the classification of the stakeholder analysis and SNA framework, as an overlap of different roles (e.g. simultaneously as garden leader and academic or professional or political candidate) is typical in Estonia

and part of the explanation for the influence of this niche over time. We find these multiple positions also among the support network of the CAI, where part of the supporters are at the same time also associated with specific-interest national newspapers (Sirp, Mürileht), making access to these platforms easier.

5.4.2.2 Results

Meta-Data

Voices present/missing/dominant in the discourse: According to the SNA, the most powerful actors in the network are the (1) founders of the CAI, who are still actively engaged in Eco Garden but moved on in Emajõe Garden, (2) the planners and politicians of the City of Tartu, who permit and govern land uses, (3) the developers, who have contesting land use interests, as well as (4) the support system of the CAI in the urban gardening niche, such as e.g. other urban gardening and sustainability-oriented organizations in Estonia. When looking at the voices present in the public discourse surrounding the CAIs, it becomes apparent that the promoters of the niche, especially the garden leaders, are dominant in comparison to the voices from the regime (i.e. planners, public officials and politicians). The voices of the latter are present, but to a lesser extent and mainly in a non-personal form, for example rather spoken about than spoken with and if, then not actively cited - while the garden leaders are often present with their names, with citations and in many cases also with illustrative photos. The voice of developers and others with interests in alternative land uses, are totally absent from the public discourse. However, it needs to be questioned if this absence can be explained by a lack of power in participating in the discourse or a lack of need to legitimize one's land use interests to the public and/or officials. The discourse of the niche is mainly mediated by the garden leaders as active promoters of the CAIs, only in a few cases via the eyes and words of the gardeners as beneficiaries or the CAI. They tend to speak from different discourse positions, reflecting their overlapping roles in the niche and in Estonian society. These include them as garden leaders, leaders and/or initiators of sustainability networks (e.g. Transition Town), as professionals in the fields of landscape architecture or academia, or as political candidates (for the Estonian Green Party). In the wider "Edible City" network, some also speak in mutual roles as gardening leaders and as urban gardening coordinators in Tallinn (hence as public officials).

Visibility of the topic and the CAI in public discourse: The urban gardening topic seems to have moved in its positioning in public media over time - starting from a placement of the articles in more niche-interest newspaper sections as e.g. "women", "household", "country life" and moving towards wider-interest sections such as "sustainability", "environment" and the "opinion" section. Emajõe Garden CAI seems to be more present in the media and to actively engage with it. In the interviews (see also IA), it was confirmed that Emajõe garden used proactive communication with the general public, the city government and the immediate neighbors of their plots as an advocacy tool. This included media articles, interviews, presentations, maps, flyers etc. Supporters and leaders of Eco Garden have confirmed the more limited presence of their CAI in public media, mainly pointing to the high workload to manage the garden that leaves little time to deal with communication.

Manifest and latent content

Changes in topic focus and framing over time: There is change and consistency in the discourse over time. A continuous thread is the link between community gardening and land use issues, which also mirrors the long-term struggles related to land use as described in the system mapping (see SM). At the beginning of the analysis period (2011 onwards), especially community gardening was more associated with activism (incl. experimental approaches and bottom-up actions), which also mirrors the actual strategies at that

time (see IA and SM). Over time, challenges with regards to the institutionalization and growing acceptance of urban gardening have also started to figure in the discourse (e.g. discussing bureaucracy, need to regulate and legally protect gardening areas, growing interest in gardening). In the latter phase of the analysis period (2019 onwards), urban gardening was often related to central current issues (e.g. corona and health crisis, permaculture and ecological/climate crisis, food and energy crisis, migration and integration) and how it could help mitigate these.

Calls to action: In accordance with the key factors laid out in the system mapping (see SM), the calls for action directed towards the decision-makers on land uses in Tartu mainly focus on (1) expanding and securing land uses over time and (2) support from the public administration of the City of Tartu in form of a more active and protective regulation and management of urban gardening land uses. To support these calls to action, explicit comparisons with the more active community gardening management in Tallinn are drawn several times. Part of the calls to action are also directed at the general public of Tartu, or generally, to Estonian society, focusing on overcoming their reservations regarding urban gardening (e.g. actively addressing common scepticism regarding the safety of growing food in the city) and inviting them to join the projects as gardeners, visitors or activists.

Categorization of CAI and CAI's discursive strategies: The urban gardening CAIs were over time categorized in different ways in public discourse. While there were more “positive”, altruistic and neutral representations of Eco garden's doings and leaders; Emajõe garden was associated more with critical new ideas concerning city planning and the creation of a sustainable society. Activists and supporters of the niche (sometimes in overlapping positions) actively and continuously address hegemonic discourses surrounding urban gardening in the (post-socialist) city, by arguing for the relevance and benefits of their activities and presenting them as ‘modern’, ‘green’, and ‘sustainable’ city practices. Emajõe Garden has applied these strategies more actively than Eco Garden.

5.4.3 Social Network Analysis (SNA)

5.4.3.1 Documentation of application of the method

The Social Network Analysis builds on the former stakeholder analysis (see D 1.2), interviews with central stakeholders of the urban gardening niche in Tartu (see IA), as well as inputs from the textual analysis (where applicable) and an in-depth analysis of Emajõe Garden's user profile (Narusson et al. 2023). It should be noted that in the SNA graphs, two main stakeholders - planners (supportive and opposing phases) and politicians (phases of support and phases of indifference) of the CoT - had to be “split” according to their relationship with the CAI at different points in time. For the Emajõe Garden CAI, the founders of the CAI had to also be entered as two elements of the graph as their impact and role was different in the initial and in the later phase of the CAI development. For the flow of resources portrayed in the SNA graphs, three descriptions were added that describe the political and administrative sphere of influence on the CAI, which has been crucial for different phases of development. These descriptions include direct “political influence” exercised by politicians in supportive periods to overcome administrative hurdles, as well as “lack of administrative support” and “missing or overregulation” of the urban gardening niche, which were relevant in times of resource withdrawal from the CAI (see also the explanation of SNA below). For an overview of all stakeholders and their relationships, please see Annex 1-4 and Figures 5.4.1-5.4.2.

5.4.3.2 Results

Influence and power in the network



The most powerful actors in the network are (1) the founders of the CAI, who are still actively engaged in Eco Garden but moved on in Emajõe Garden, (2) the planners and politicians of the City of Tartu, who permit and govern land uses, (3) the developers, who have contesting land use interests, as well as (4) the support system of the CAI in the urban gardening niche.

(1) Both **CAI founders** have heavily invested in the initiation of the CAI, which also collided with the initial stages of the “new” urban gardening niche in Tartu. Urban gardening that had existed before in the form of dacha gardening has lost importance during the post-socialist transition period, and has been revived in the form of community gardening and allotment gardening since about 2010. While in Eco Garden, the founder is still deeply involved, in Emajõe Garden the founders have moved on to other projects related to sustainability, degrowth and permaculture, but are still supporting the new garden leadership, if needed. What makes them influential are the resources they put into the CAI (time, knowledge, work, endurance, strategic thinking, lobbying efforts) and their strong cooperative relationships (and often personal involvement with the support system of the CAIs).

(2) The **planners and politicians in the City of Tartu** have highly influenced the land use possibilities of the CAIs, and the development of the urban gardening niche in general. The development in terms of land use (finding land for gardening, consolidating the legal rights of usage and expanding the garden areas to accommodate for the heightened interest in gardening) is characterised by more and less supportive phases (see MLP scheme and SM). These phases are influenced by the need to balance competing land uses (with developers) and administrative (lack of) support in regulating urban gardening. During less supportive phases, the gardening leaderships have at times turned to the vice majors of Tartu, who - depending on their political will - have either used their political influence to help overcome administrative hurdles or have been indifferent to these requests. What makes them influential is their ability to control critical resource flows for the development of the CAIs and the niche, in particular the permission and regulation of land uses and administrative support.

(3) The **developers** are the stakeholder with the main competing land use interests, intending to use the space for either real estate or parking lot developments, which has resulted in several forced relocations. These have affected Emajõe Garden more often than Eco Garden (see IA and SM for more information). What makes them influential is their stake in critical resources i.e. land use and land ownership. Despite their high influence, they have been much less visible than the planners and politicians of the City of Tartu (e.g. in public debate and critical discussions in times of lack of support, see TA).

(4) The **support system of the CAIs** in the urban gardening niche has developed over time, with substantial input and support from the founders of Emajõe Garden, and the current leaderships of both gardens. It includes Tartu’s urban gardening network, the edible city network linking gardening projects between different cities in Estonia (mainly Tartu and Tallinn), other sustainability-oriented projects (the “Growing Food as Survival Art” project, the Curated Biodiversity project, early-stage supports in Eco Garden) and organizations in and beyond Tartu (e.g. Transition Town, Repair Café, Tartu Nature House, Estonian Landscape Architectural Association, the Eco Centre of Estonia’s University for Life Sciences). What makes them influential is their clustering around the same ideals, their will for mutual support and their active use of resources such as visibility/advocacy, knowledge-transfer, organizational support, search for funding, etc., in times of need.

Conflict and tensions within the network



Most of the relationships **towards the CAIs** are **cooperative**. These cooperative relationships occur within the niche (between different gardening and sustainability oriented organizations / groupings) or between the regime and niche level (e.g. rather positive media representations of the urban gardening niche in Tartu, support by the educational institutions of the CoT and the universities in Tartu). However, only half of these cooperative relationships are strong, while the others are of medium or weak intensity.

One central strong relationship – with the planners of the City of Tartu (CoT) – is, however, partly conflictual and influenced by another stakeholder with land use interest: developers. This triangle marks the **central conflict** over land use in the network (see also MLP and SM schemes). It is at times intervened by politicians (vice majors), who, in support of the CAIs, use their political influence to overcome administrative hurdles. Such political support was lobbied for by the founders/leaders of the CAIs, and in the case of Eco Garden with help of an early-stage supporter. However, direct contact between the CAIs and developers is missing.

Main **relationships on the regime level** occur between politicians and the public administration of the CoT. This relationship varies over the development period of the niche, with phases where politicians exert influence on the administration and times when they do not, depending on how involved the politicians feel in the niche and how much they are committed to the ‘green city’ cause. Although less strongly, also media reports have put pressure on the planners of Tartu to resolve land use issues in favour of the CAIs, and joint R&D projects have helped to find collaborative solutions (see IA and TA). Also, the relationship between the CoT and land developers plays an important role, especially in times when garden relocations had to be enforced to ensure development projects in the areas (e.g. parking lots or real-estate). The nature of this relationship depends on questions of land ownership and competing land use interests. The initial garden areas of Emajõe Garden (the so-called Vaksali Garden) were, for example, located on private land (with permission of the owner) until development interests were realized. Other garden areas (e.g. Aleksandri Garden phase of Emajõe Garden’s development) were located on municipal land for which the land use interests changed over time (i.e. to build a parking lot for a municipal kinder- garten).

Niche maturation and development

The main Window of Opportunity (WoOp) occurred around 2017-18, when urban gardening territories were written into the zoning plan for Tartu (CoT 2017). This can be seen as an important moment of advocacy and networking between the actors in the niche (exemplified in the moment when the “Food Urbanism” Conference was organized), and support by the planners and politicians of the City of Tartu in resolving future land use conflicts by institutionalizing the gardens’ land uses. While the cooperative relationship within the niche and the wider public of Tartu (e.g. resembling continuous positive media coverage, see TA) could be secured, the cooperative relationship with the City of Tartu could not. The WoOp was accompanied by the forced destruction of the ‘old’ dacha gardens and followed by the need for relocation of both CAIs (representing the ‘new’ garden forms). While more supportive phases occurred afterwards, it can be concluded that the development of a stronger supportive relationship between the CAIs and the planners of Tartu (which does not have to be intervened by varying political support of vice majors) would strengthen the **niche’s maturation**. This also depends on regime resources to offer more proactive regime support as done for example in Tallinn, where two urban gardening coordinators and regular funds for urban gardening have been institutionalized - a role model that has repeatedly been referred to by the garden leaders in the media debate (see TA). As this relationship is part of a triangle of land use interests, it might also be helpful to develop a missing relationship with developers and other

potential land uses to secure their investment in a 'green city' development that includes a steady role of urban gardens.

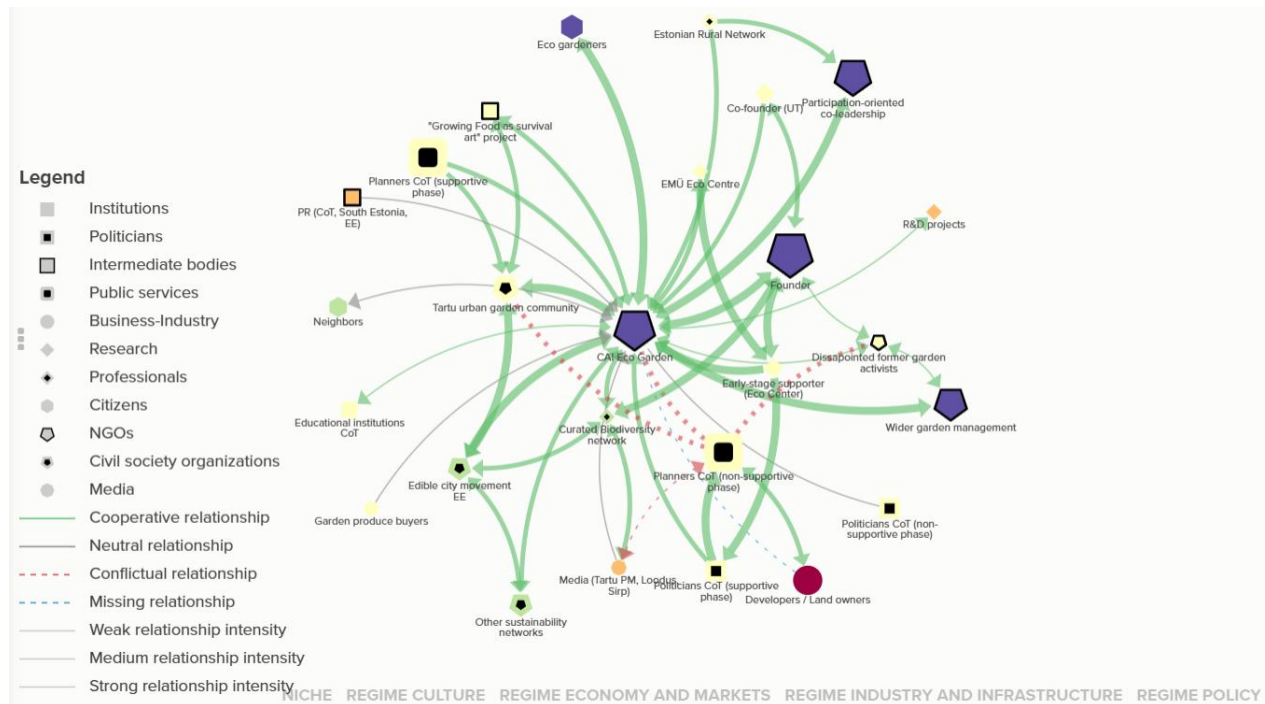


Figure 5.4.1: Eco Garden

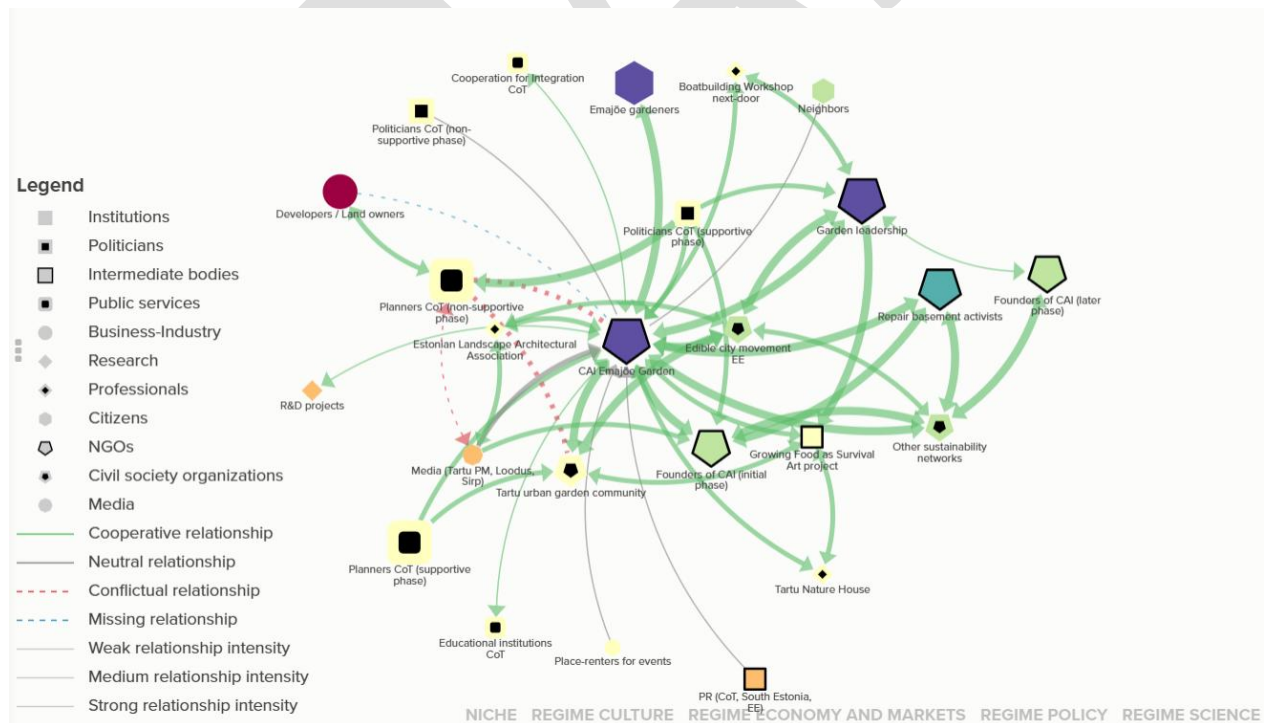


Figure 5.4.2: Emajõe Garden

5.4.4 System Mapping (SM)

5.4.4.1 Documentation of application of the method

The System Mapping builds on the inputs from D 1.2. as well as the interviews and textual analysis. The regime and niche level developments built on the different stages of the MLP analysis and auto-ethnographic accounts of two gardening leaders (Nõu and Niin, *forthcoming*). Where applicable, also insights from the SNA analysis and from an in-depth analysis of Emajõe Garden's user profile (Narusson et al. 2023) were added to describe the different patterns in more detail. While the development over time for the majority of patterns is pretty similar for both CAIs, for the “spreading of eco (gardening) ideas” the pattern graph had to be split according to the different developments in Eco Garden and Emajõe Garden. The analytical steps included the identification of CAI dynamics, patterns and factors influencing them over time, based on interviews and textual analysis, as well as an analysis of the factors influencing niche and regime-level processes, and processes between them, to provide a multi-level perspective. The Causal Loop Diagram analysis is based on an overview of the dynamics of niche-regime relationships for both CAIs on the issue of urban gardening land use, and on the processes of how CAI actions have influenced politicians' decisions, and how the City of Tartu's decisions have in turn influenced Emajõe Garden and Eco Garden's proactive new actions.

5.4.4.2 Results

Regime level

Regime level issue that led to niche development(s):

The central regime level issue that led to the niche development was the lack and decrease of gardening, consumption-free and DIY spaces in the City of Tartu (CoT) at a time of ongoing urbanization and increasing need of people to grow food and be in nature not only out of the city, but also in the city.

Pattern(s) of key factor(s) at regime level

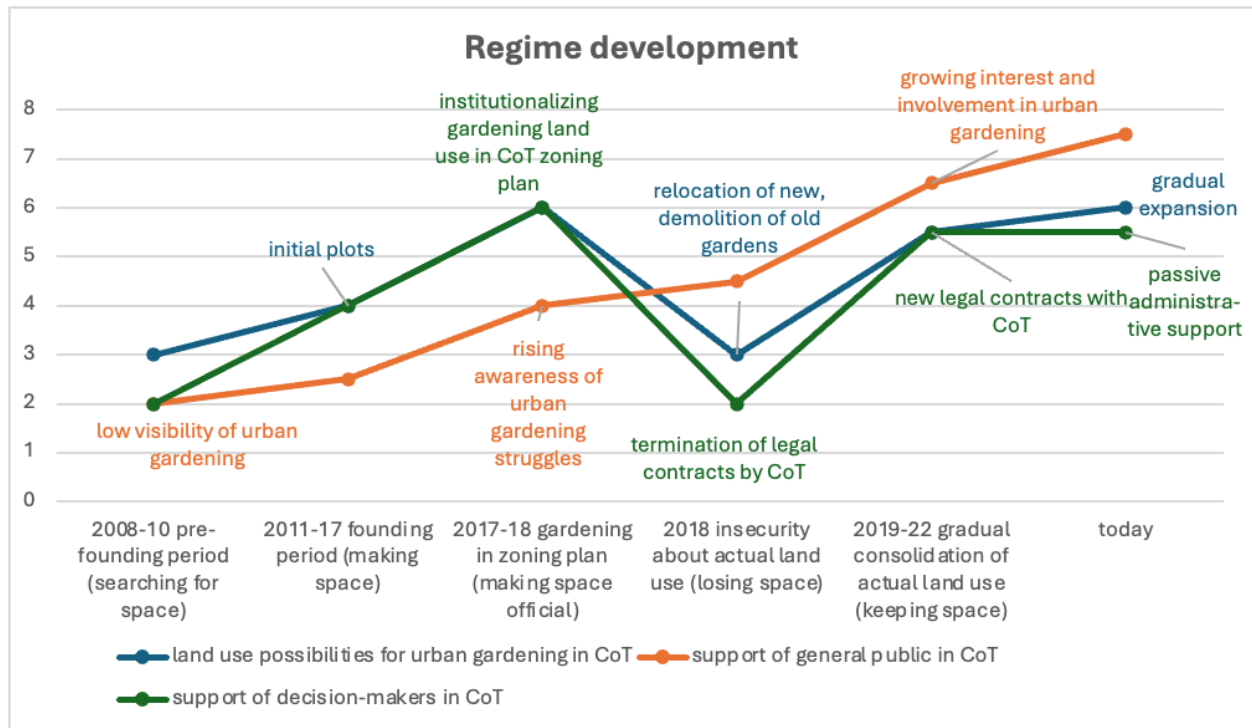


Figure 5.4.3: Pattern(s) of key factor(s) at regime level

Key factors: Central regime level developments that the niche addresses are (1) land use possibilities for urban gardening in the City of Tartu, which were influenced by (2) the support of the general public in CoT and, even more crucially, by (3) the support of decision-makers in CoT. The niche at focus is the new urban gardening community in the CoT. Urban gardening existed before in the form of dacha gardening, lost importance during the post-socialist transition period, and has then been revived in the form of community gardening and allotment gardening since around 2010.

Chronological description of pattern graphs: Central points for the regime development over time were (see also MLP scheme):

- (1) the pre-founding period (2008-2010), with little space for new urban gardening and decreasing space for dacha urban gardening and the need to search for gardening space,
- (2) the period of acquiring space for gardening, hence the founding and first expansions of the gardens (2011-2017),
- (3) the WoOp in 2017-18, when gardening space was made official with a consolidation of gardening as a land use purpose in the zoning plan, which was followed by
- (4) a period of a sudden loss of gardening space due to forced relocations of new and the demolition of the 'old' dacha gardens, and,
- (5) finally, since 2019, the gradual consolidation of actual land use by signing new (longer term) contracts, increased interest towards gardening, and slow expansions of gardening areas, with the intention and hope to keep the gardening space.

The **land use pattern** is characterized by initial success where land was sought in the CoT for the new urban gardens from 2010 onwards. While Emajõe garden used guerilla gardening tactics and tactical urbanism to create first gardens on vacant lots, Eco Garden engaged in advocacy work with the city to finally receive

land for gardening at peripheral areas in Tartu (see also IA). These initial 'solutions' did, however, not prove secure as land contracts were short and land uses provisional. Emajõe Garden had to relocate. This inspired advocacy work to consolidate urban gardening as a land use purpose in Tartu's zoning plan (CoT 2017), which was successful in 2017-18 (see also TA). The consolidation of gardening as land use purpose did, however, only apply to certain areas in the city and could not secure the actual land use of the gardens at the time. As the underlying problem – the pressure between competing land uses in times of urbanization and the more defensive position of urban gardens who could not compete with more profitable land uses in a neoliberal urban governance regime – was not resolved, this achievement was followed by a sudden loss of space for gardening. This meant the forced relocation of the 'new' gardens – the contracts for Eco Garden and Emajõe Garden were terminated to develop parking lots, as well as the final demolition of 'old' dacha gardens for infrastructural development. After this disruption, actual land use moved towards consolidation from 2019 onwards, by providing Eco Garden new and gradually expanding space at the outskirts of the city and Emajõe Garden new space on municipal greenland.

The **decision-makers' support pattern** is characterized by an initially passive yet finally permissive phase during which land was sought for urban gardening. As there was no (pro-)active engagement by the city, this phase was largely made possible by the active advocacy of the garden leaders who at this time developed a support network. This, however, also meant little persistence of the actions, as the CAIs had to relocate several times to make space for real estate and parking lot developments. The development of a support network within and beyond the niche helped to actively advocate for more secured land uses, a Window of Opportunity (WoOP) was created in 2017-18 for regime support during which garden land use was institutionalized in the zoning plan of the CoT. As this institutionalization secured only certain areas in the city but did not mainstream the city's support (e.g. by assigning an urban gardening coordinator, as done in Tallinn – which Tartu's gardeners have named as an example on several occasions, see TA), the support was still varying, depending on the proactive work of gardeners and changing political goodwill, which could not be steadily secured. As a result, even the zoning plan achievement could not prevent the termination of garden contracts in 2018-19 to accommodate other land use needs (parking lots and real estate in new garden areas, infrastructural development for old garden areas). After another relocation, the current contracts were signed and the development has entered the ongoing period of existing administrative support by the CoT, which is still seen as too passive by the gardeners. They criticize, for example, that even if long-term contracts were signed, these still are not permanent, and that responsibilities within the city government for urban gardening remain unclear.

The **'support by the general public' pattern** is characterized by an initial low visibility of urban gardening at a time when dacha gardening had lost importance during the post-socialist transition period, when food self-provisioning was seen as obsolete, and new gardening forms were still met with initial caution. The CAIs, especially Emajõe Garden, worked actively to increase the visibility of their activities and their cause with public events and media presence (see TA). Eco Garden organized a public lecture series in cooperation with the Estonian University of Life Science. Media and public events (especially the "Food Urbanism Conference" organized with high involvement of the Emajõe Garden founders) were also actively used to advocate for the adding of garden areas in Tartu's zoning plan and to defend the dacha areas from long-planned demolition for infrastructural development (which was dubbed "the Chinatown War", see MLP). Next to this increased awareness, it was the landscape level crises from 2019 onwards - in form of the COVID pandemic and the War against Ukraine – that highly increased the interest and

involvement in the gardens, and led to a tangible rise in numbers of garden members, especially in Eco Garden which had space to expand at the outskirts of the city.

Dynamics at regime level

The causal dynamics at the regime level

The central regime level activation of the City of Tartu (CoT) on urban garden issues has gone through the following dynamic: (1) visibility of CAI activities in Tartu, which led to (2) strong media and public reaction and (3) the regime proposed an interim solution to CAI. The issue of land use of several urban gardens led to (4) tensions and the initiatives proposed to the CoT an urban land use scheme, which led to (5) a regulation: the city zoning plan; after that (6) the active interest of the city government waned.

How did developments at the regime level occur? The regime in Tartu has been activated when the issue of land use and operation of urban gardens has been raised by initiatives or citizens demanding that the city address the situation, and the issue has reached the media. Between 2016 and 2017, the municipality began to pay attention to the guerrilla gardens, following requests from citizens and media attention to the self-organized garden. The regime then responded to the gardeners' initiative and sought a solution (a temporary garden on city-owned land). In 2017-2018, there was a major conflict over community gardens in Tartu due to urban planning, called the Chinatown¹ War. The leaders of Emajõgi Garden and Eco Garden participated in public meetings on urban planning organised by the City of Tartu and raised the issue of land use regulation for urban gardening. After a thorough discussion meeting, the garden representatives submitted a proposal to the city in the summer of 2017 to define garden land in the city as one of the land uses. The proposal was implemented. However, only large gardens with private plots, such as the Eco Garden, were designated as urban garden land. Community gardens such as the Emajõe Garden, which deal with sustainability issues and the development of green spaces and landscape architecture in the city (i.e. long-term issues), were not designated as urban garden land.

What were the consequences of these developments? The designation of urban garden land is a valuable step forward, but it is a solution for the present moment. The Emajõe Garden initiative, which is consciously developing an urban environment and interested in long-term climate and environmental solutions in urban areas, has not received the certainty that it can operate sustainably in its garden area because its garden is located in the urban green area and not in the garden land.

What factor(s) influenced the key factor(s)? Developments at the regime level are influenced by the fact that there is no single department within the municipality with staff dedicated to urban gardening issues. At the municipal level, different actors have worked with urban gardeners, from the deputy mayor to different departments. In some periods there has been more interest and in others less, depending on factors such as (1) how relevant the issue has been considered by the administrators and in local policy, (2) how actively urban residents are paying attention to urban gardens at the time; (3) the extent to which there are unresolved issues regarding the land use of urban gardens.

Which of these factors directly drive each other in what way? The activation of the initiative(s) and the visibility, e.g. in the form of guerrilla gardening, raising new issues/questions, has led to pressure on the regime or the CoT, forcing the city authorities to respond to the public, present their views or take concrete

¹ Chinatown (officially the Jaamamõisa district) was built in Tartu after World War II for the families of Soviet army officers. Single-storey wooden houses were built initially; later, multi-storey standard and prefabricated houses were constructed. The area is still used as a residential area. The 'war' on Chinatown urban gardens began during the Chinatown Revitalisation Project, which saw the construction of new housing and a road network.

steps to resolve tensions. However, once a temporary or, in the eyes of the regime, sufficient solution has been found, its interest in urban gardening wanes. The issue is no longer pursued with the same intensity and interest.

CLD of regime level dynamics

DYNAMICS: Visibility of CAI activity → city residents reactions → media/public pressure to regime → temporary solution by the regime → CAI dissatisfaction → resolution on the zoning of the urban garden → CAI visibility

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REGIME LOOP

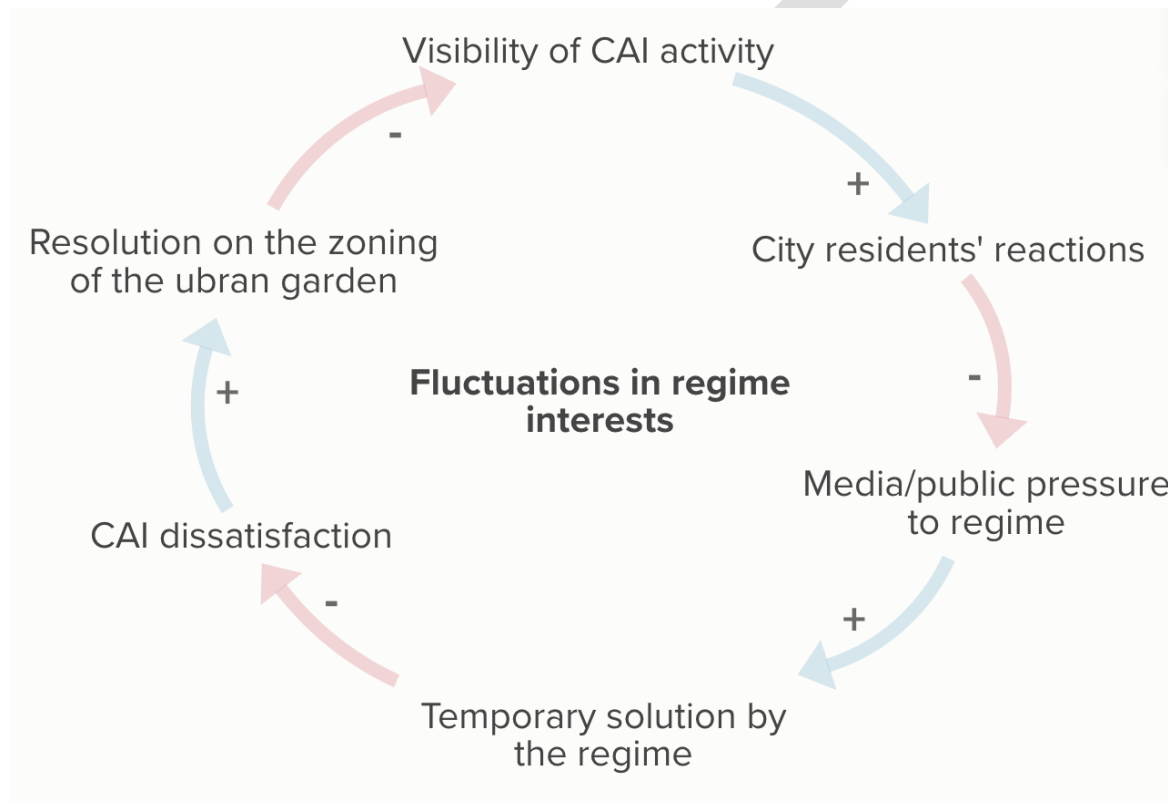


Figure 5.4.4: Regime Level Loop

Niche level

Initiative goal: The CAIs pursued the aims to raise awareness of and interest in alternative eco ways of living (and gardening) in an urbanized society and to make space for gardening, DIY and consumption-free activities in the city.

How did the niche level want to contribute to address the regime level issue?

Key factors: The urban gardening niche in Tartu wanted to contribute to the regime level issue by (1) securing areas of land use for urban gardening, (2) raising the residents' interest in urban gardening, which is mirrored in the membership development, and (3) spreading the ideals of eco life and eco gardening in Tartu and beyond.

Pattern(s) of key factor(s) at niche level

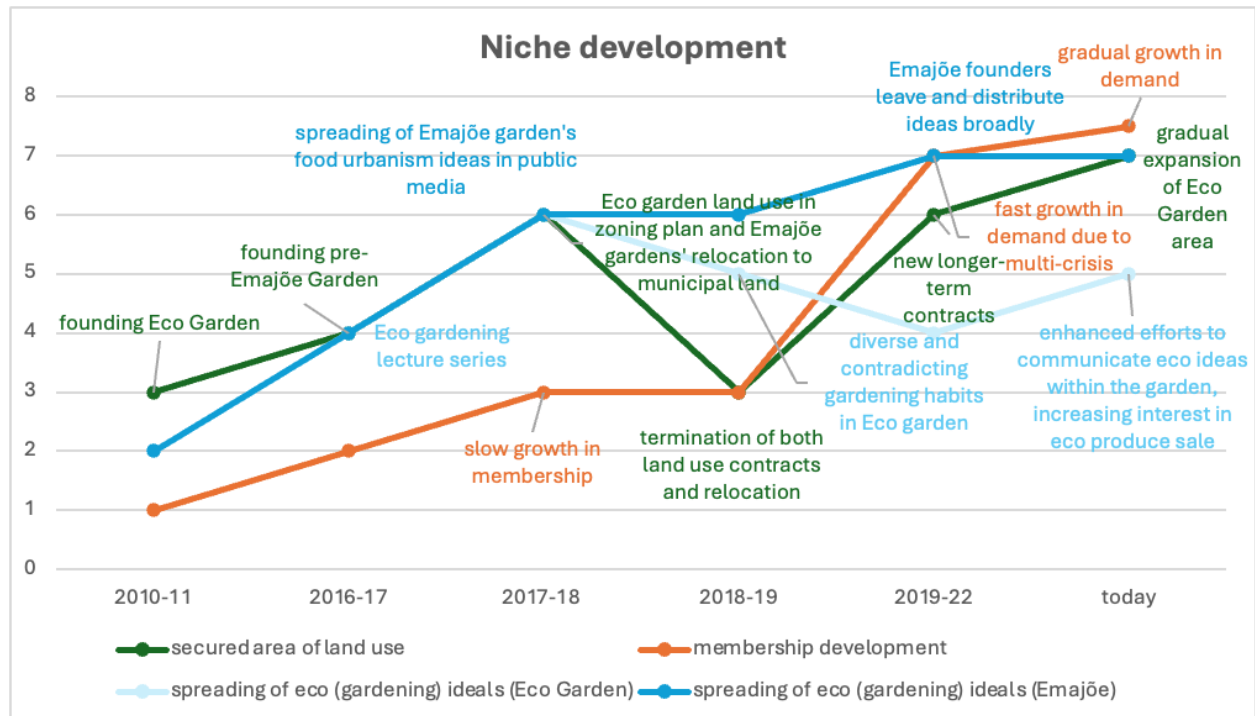


Figure 5.4.5: Pattern(s) of key factor(s) at niche level

Chronological description of pattern graphs: Central points for the niche development over time were (see also MLP scheme, section 5.4.5.4):

- (1-2) the period of making space and spreading ideas, hence the founding and first eco campaigns of the gardens (2011-2017),
- (3) the WoOp in 2017-18, when the use of land for gardening was consolidated by making it an official land use purpose in the zoning plan and the relocation of Emajõe Garden to municipal land, which was followed by
- (4) a period of sudden loss of gardening space due to contract termination and forced relocations,
- (5) finally, the gradual consolidation of actual land use by signing new (longer term) contracts, increased interest towards gardening, and slow expansions of Eco Garden's areas as well as gradual wider distribution of the eco life ideas by Emajõe Garden

The "secured area of land use" pattern is characterized by initial success where gardening space was sought in the CoT for the CAIs from 2010 onwards. While Emajõe garden used guerilla gardening tactics and tactical urbanism to create first gardens on vacant lots, Eco Garden engaged in advocacy work with the city to finally receive land for gardening at peripheral areas in Tartu. As land contracts were for short periods and land uses were provisional, these initial gains in gardening land did not prove secure. Emajõe Garden, initially located on privately owned land, had to relocate - this time to municipal land. This inspired advocacy work to consolidate urban gardening as a land use purpose, which was successful in 2018. The consolidation of gardening as land use purpose did, however, only apply to certain areas in the city and

could not secure the actual land use of the gardens at the time. The hopes associated with this consolidation did not hold as this achievement was followed by a sudden loss of space for gardening (see above), meaning the forced relocation of Eco and Emajõe Garden. After this disruption, actual land use moved towards consolidation from 2019 onwards, with Eco Garden acquiring new space at the outskirts of the city and Emajõe Garden new land on municipal green space. While for Eco Garden, the location in the urban periphery relieved development pressures, for Emajõe Garden more stability was ensured by locating the garden not only on municipal land (where it was before), but on municipal land marked as green area in the zoning plan (CoT 2017), with the hope of preventing another change in land use (as the former municipal land use had been changed to enable the building of a parking lot). From then on, Eco Garden's land use gradually expanded, accommodating the increased interest in gardening. Emajõe Garden did not grow and is still facing shorter-term contracts than Eco Garden.

The “membership development” pattern is characterized by an initial slow growth phase (2011+) in membership due to the low visibility of urban gardening at a time when food self-provisioning was seen as obsolete (remnant from the socialist past), and new gardening forms were still met with initial caution. Moreover, membership growth was impeded due to the instability in land use at the time with short land use contracts and several relocations of Emajõe and Eco Garden. Once the current land was secured and longer-term contracts signed, the membership could grow and was accelerated during the landscape level crises from 2019 onwards - in the form of the COVID pandemic and the War against Ukraine – that highly increased the interest and involvement in the gardens. Moreover, good contacts with the media in Tartu are also used to keep inviting new members every season (see TA and SNA). The tangible rise in numbers of garden members could be better accommodated in Eco Garden, which had space to expand at the outskirts of the city and has done so several times, whilst Emajõe garden has remained stable in size.

The “spreading of eco (gardening) ideals” pattern differs for Emajõe Garden and Eco Garden. After their founding, both started with investments into spreading these ideals in public media (mainly Emajõe Garden) and initiating an eco-lecture series (Eco Garden) (see IA and TA). These efforts became very visible during the public debate around the zoning plan and the future of new and old urban gardens in Tartu in 2017-18 (so-called Chinatown war and Food Urbanism Conference). After unexpected relocations in 2018-19, the CAIs went different ways. Following the relocation and the continuous growth in membership and size since then, Eco Garden faced struggles with diverse and contradicting gardening habits that do not always fully fit eco gardening ideals. While finding time to address these issues is still challenging due to the high workload with managing the garden and its infrastructure (in the context of rather passive administrative support, see above), the garden leadership has initiated a communication and training project on eco gardening practices for the members. Also, the Eco Garden produce sale has become more popular, showing a higher demand for eco products. Emajõe Garden, on the other hand, has successfully established its permaculture gardening image and practices. After leaving Eco Garden, the founders have distributed eco ideals more widely beyond the borders of Tartu, engaging e.g. actively in the Permaculture Association and larger landscape architectural projects. The trickling in of important environmental topics such as the climate crisis, green transition and sustainable city development into Estonian media and politics in general during the last five years has helped the wider awareness of eco life ideas along (see TA).

Dynamics at niche level

Why and how did certain developments at the niche level occur? **Niche developments** were driven by an initiative to grow food in the city and raise environmental and climate awareness. It started on private land. The community garden initiative grew rapidly. When a landowner wanted to start construction work on the land, the initiative applied to the city for land for a city garden. A plot of land belonging to the city was given to the gardeners for temporary use. After two years, the city wanted to start construction on that plot. By agreement, the garden continued to operate on the city green area. The interruptions to the garden's development have increased its resilience and flexibility. The change of location is due to construction activities and policy issues that have paid little attention to green initiatives in the city. The Eco garden fared better in terms of land use. The Eco garden had to move, i.e. the city wanted the land returned and found a replacement on vacant land on the edge of the city, which was designated as urban garden land and on which a new organic garden was established.

What were the consequences of these developments? **The consequence** has been that the CoT has turned its attention to the issue of urban gardening when tensions have arisen and land use issues/questions have been raised by city residents and initiatives. Interruptions, relocations and restarting have been time consuming and urban gardening has struggled to remain stable. However, in order to communicate with the CoT and the media, initiatives have developed their own messages, coordination and agency.

What factor(s) influenced the key factor(s)? **Key factors** have been the size of the gardens' membership and the scale of their impact. The number of Eco Garden members has grown steadily (currently 500 members have rented plots). The CoT pays more attention to Eco Garden activities because of the large number of gardeners. The number of people active in the garden is smaller in the Emajõe Garden (about 20 active gardeners per year). The area of the garden is also small. However, the Emajõe Garden brings together a significant group of people who have been active in the initiative group over the years, but now live in different places in Estonia and abroad, and continue to be active in influencing climate-conscious lifestyle choices. However, the main supporters of the Emajõe Garden initiative are not active in Tartu and do not set the tone locally in the city.

Which of these factors directly drive each other in what way? **Factors influencing each other:** (i) The size of the land given to the CAI by the CoT influences the number of active gardeners in each urban garden. (ii) The purpose and focus of the CAI's activities is linked to the definition of the land (Eco Garden operates on urban garden land and Emajõe Garden operates on urban green space). (iii) The specific Eco Garden is run by people with an interest in growing food for themselves. The Emajõe Garden aims to raise awareness and interest in alternative ecological ways of living (and gardening) in an urbanised society, DIY and non-consumerist activities in the city.

CLD of niche level dynamics

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Niche-level dynamics in land use: gardeners' activism → Little space for urban gardeners → Activism in acquiring land → tensions in finding solutions → consolidation of gardening in the zoning plan → little attention to urban garden concerns (of further development)

NICHE LOOP



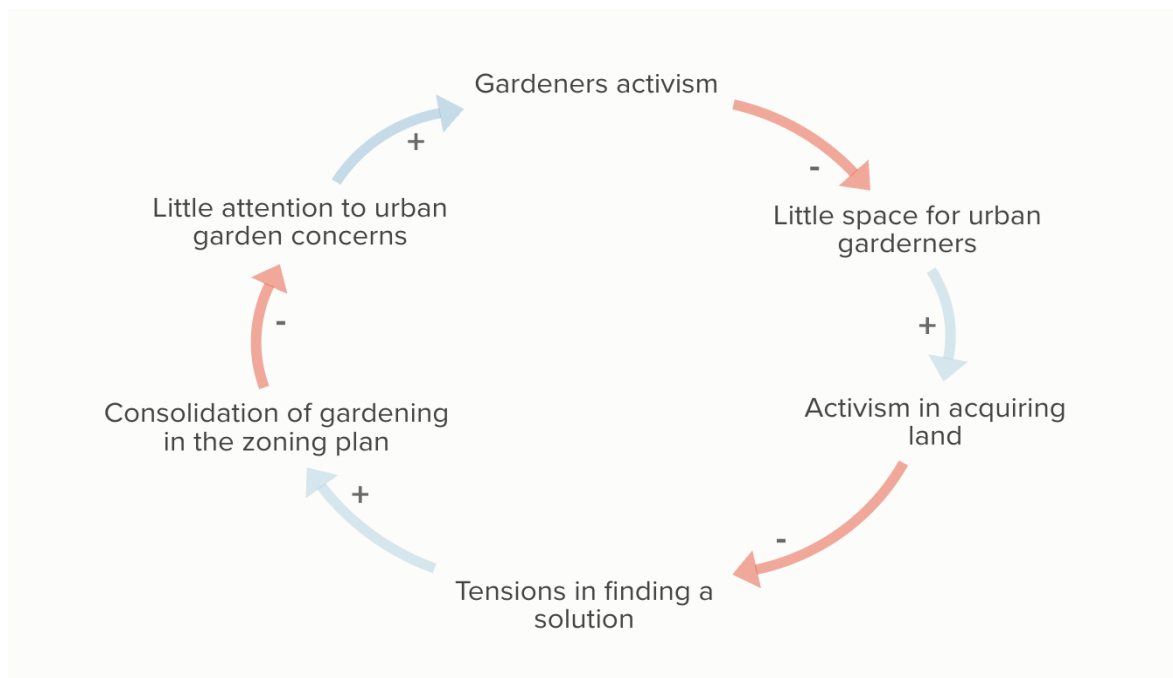


Figure 5.4.6: Niche Level Loop

5.4.5 Summary and Conclusion

The summary, including the MLP analysis, is based on inputs from all the analyses provided in more detail above, including the textual and interview analysis, the SNA analysis, as well as the system mapping and causal loop analysis. These are contextualized with the help of former studies on urban gardening, spatial contestations and urban activism in Estonia (Kljavin et al. 2020, Narusson et al. 2023, Nõu and Niin *forthcoming*, Plüschke-Altof et al. *forthcoming*, Poom and Sepp 2020, Pungas et al. 2020, Sooväli-Sepping 2020, and Tint 2009). It summarises the main trends prevailing in the data.

5.4.5.1 Origin & Evolution of HE

Landscape-level and regime-level processes, which were central for the **initiation of the urban gardening niche in Tartu** included (1) different crisis situations, (2) the post-socialist transformation with its influence on (sub)urbanization processes and the cultural acceptance of gardening practices in Estonia, as well as (3) the industrialisation of agriculture and commercialization of food provision. Urban gardening has existed before in Estonia, most recently in the form of dacha gardening. But it had lost importance during the post-socialist transition period, and has only been revived in the form of community gardening and new allotment gardening from 2010 onwards.

For the initial period, the global financial crisis of 2008 was highly relevant (for Eco Garden). Equally, the idea of finding gardening space in the city which would help buffer the impact of the crisis, as well as the increasing awareness of the climate and environmental crisis (for Emajõe Garden) played an important part. Different and continuous crisis situations (e.g. environmental and climate crisis, COVID health crisis, migration crisis and the War in Ukraine) played a role in the evolution of the CAIs as well. They were especially influential in proving the relevance of the CAIs objectives and actions in addressing or mitigating these crises and in increasing the numbers of gardeners who want to engage in the CAIs to individually respond to the crisis situations. Also, the (sub)urbanization trend combined with the extensive land

privatization of the post-socialist period since Estonia regained independence in 1991 were important backdrop processes, against which the ideas emerged to provide access to nature in the city, and land for people who do not own private gardens or summer houses. The plan to re-establish urban gardening needed, however, to be taken on board by the decision-makers and the general public as urban gardening had been seen as obsolete after the end of the Soviet Union. During the transformation period, widespread food self-provisioning practices were replaced by market provision, and parts of the former dacha gardens were demolished. The CAI initiators, leaders and supporters saw general commercialization of food provision and industrialization of agriculture as problematic developments, as they limit access to organic food and thereby impede human and environmental health. This critique could build on a long-standing home-grown food tradition in Estonia.

The **evolution of the urban gardening niche** can be divided into five main phases: (1) the pre-founding period (2008-2010), with little space for new urban gardens, decreasing space for dacha urban gardens and the need to search for gardening space. During this period, community gardening was largely associated with activism (incl. experimental approaches and bottom-up actions), which also mirrors the actual strategies at that time. The second period (2) of acquiring land, or the founding and first expansions of the gardens (2011-2017), was followed by (3) the WoOp in 2017-18, when garden land was made official with a consolidation of gardening as a land use purpose in the zoning plan (CoT 2017). As a surprise to the gardeners, after that (4) a period of a sudden loss of gardening space followed, marked by forced relocations of 'new' and the demolition of the 'old' dacha gardens. The challenges of making and consolidating space also figured in the public discourse on gardening (e.g. discussing bureaucracy, need to regulate and legally protect gardening areas, growing interest in gardening, gardening as spatial politics). Since 2019, the focus lay on the consolidation of the actual land use of the two gardens by signing new (longer term) contracts, successfully increasing interest towards gardening (spurred by the multi-crises), and slow expansions of gardening areas, with the intention and hope to keep the space.

During the process of trying to acquire land and consolidate it over time in the context of little initial support, the CAIs learned important skills of negotiating with the city government, gaining political goodwill and public support and joining forces via networking. Both developed different forms of empowerment. While Eco Garden focused more on empowerment to fit and to conform to the existing regime, Emajõe garden focused more on transforming it. Both gardens provide(d) shielding functions, for example by helping to develop new collective identities as gardeners, crossing socio-economic and cultural boundaries, trying out new collaborative ways of decision-making and community-building in the spirit of prefiguration (Emajõe Garden), providing a new 'shelter' for some of the gardeners whose dacha gardens were demolished (Eco Garden), and a certain degree of protection from hegemonic ideologies and practices, by offering space for food self-provisioning as an alternative to market-based food provision, places to experiment with alternatives to more conventional forms of gardening (e.g. permaculture and eco gardening). However, during their development, neither could shield the gardens and gardeners from several relocations while fighting for gaining and consolidating gardening land in the city.

5.4.5.2 Organization & Activities of HE

Both gardens were initiated bottom-up, which felt empowering and has also been recognized from outside. Internally, the **niche-level organization** largely built on the central role of (1) the gardens' leadership. While the CAIs have gained strength from this organization - mainly via leadership stability in Eco Garden and a wider leadership network in Emajõe Garden involving people from several initiatives related to the urban gardening niche - the leadership has remained 100% voluntary and unpaid, which has

also led to an overburdening. Moreover, the CAIs developed (2) a complex support system over time, with substantial input and support from the founders of Emajõe Garden. What makes the support network influential is their clustering around the same ideals, their will for mutual support and their active use of resources such as visibility/advocacy, knowledge-transfer, organizational support, search for funding, etc. in times of need. The leadership and support system helped to build the niche's knowledge, strategies and organization based on (3) international knowledge and blueprints. This was done either via expert connections among the supporters (Eco Garden) or with the help of their own networks, enabled by the international origins of the leadership network (Emajõe Garden).

Among the central **activities and strategies** in the initiation period were (1) small scale experiments, on a small plot at the Estonian Life Science University to test both food safety and different eco gardening practices (Eco Garden) and in the form of tactical urbanism, incl. initial guerrilla gardening tactics (Emajõe Garden). Over the duration of the CAIs development, (2) advocacy work was carried out. This was particularly relevant in the initial period, when Eco Garden engaged in advocacy work with the city to receive land for gardening in Tartu, as well as for both gardens before and during the WoOP in 2018 to consolidate urban gardening as a land use purpose in Tartu's zoning plan, and continues until today as the political support is still varying, depending on the proactive work of gardeners to secure political goodwill. The CAIs moreover worked actively to increase (3) the visibility and awareness of their activities and their cause with public events and media presence. This included visibility to gain public attention and approval (especially in the initial period), advocate for secure land uses and political support (especially around the WoOP), to raise interest in gardening and thereby increase the gardens' membership and proliferate organic gardening ideas and sustainability practices among the garden users and the wider public. Continuous engagement in public discourse also helped to (re)gain legitimacy for the practice of urban gardening more widely, by arguing for the relevance and benefits of gardening e.g. for public health and crisis mitigation, and presenting (the new) urban gardens as 'modern', 'sustainable' and 'green' city practices.

5.4.5.3 Goals & intended Outcomes of HE

The **central goals** in terms of regime level developments that the niche aimed to address were (1) securing land use possibilities for urban gardening, do-it-yourself (DIY) and consumption-free activities in the City of Tartu (CoT), which was influenced by (2) the awareness and support of the general public in CoT towards alternative eco ways of living (and gardening) in an urbanized society and, even more crucially, by (3) the support of decision-makers in CoT. These goals were also continuously communicated in the public discourse, where the CAIs repeatedly called for expanding and securing land uses over time, support from the public administration in the form of a more active and protective regulation and management of urban gardening land use, and invited the general public of Tartu to support their cause and join them as gardeners, visitors or activists. With regards to **outcomes**, it can be concluded that over time, the public support was secured, which shows in the favorable attitude towards the CAIs in the media debate and the rising membership numbers in the gardens over time. Raising awareness of eco gardening ideals and practices worked to a different extent for both gardens, with Emajõe Garden establishing a permaculture image and practices while in Eco Garden, which is laid out as an allotment garden, collective gardening practices have not been uncontroversial. Despite throwbacks, both gardens have secured their land use, Emajõe Garden in a municipal green area, Eco Garden on an expanding land plot at the city's periphery. However, insecurity of the durability of land use rights prevails, as political support could not be

permanently secured, which is observable in the varying relationship with the CoT over time, oscillating between periods of stronger support, passive support and conflict. Also the link between the CAIs and the other relevant group interested in land use - developers - has not really been established nor their interest in a “green city” development secured. Both processes have impeded the maturation of the niche.

5.4.5.4 A multilevel perspective on the CAI using the MLP visualization

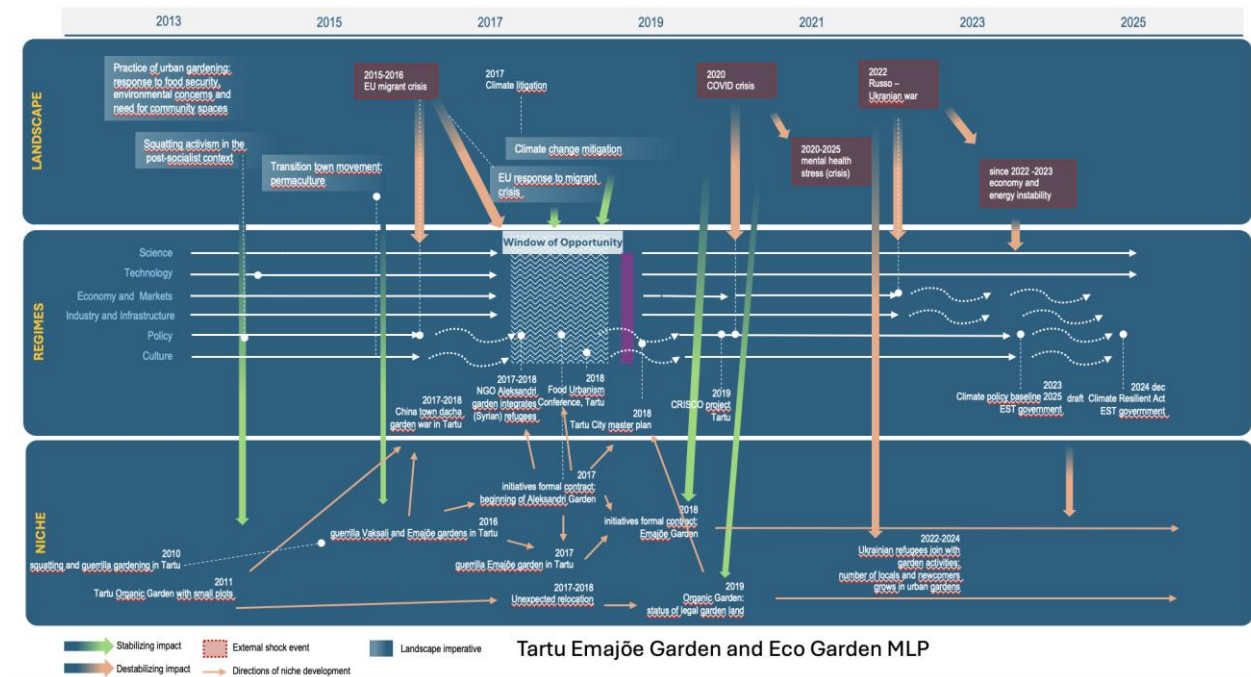


Figure 6.2.3: MLP visualization: Multilevel perspective on the CAI

The **multilevel perspective mapping** (MLP) shows links between the Eco Garden and Emajõgi Garden niche-level processes, developments at the level of the Tartu regime (the City of Tartu), and changes at the landscape level for the period 2013-2025. Activism in the years before 2013 led to the Eco Garden's start as a small group of enthusiasts. By 2016, the current Emajõe Garden initiative emerged (1-2 period: making space and spreading ideas). The Window of Opportunity was in 2017-2018 for both CAIs. Their activities became visible in the city life and media. The CAIs raised the issue and influenced the regime to include an official land use for urban gardening (3 period: WoOp). After this, the gardens had to be relocated: the Emajõe Garden got a plot in a municipal green area of the city in 2018 and the Eco Garden got a new location for a garden in 2019 at the outskirts of the city (see SM for more detailed info). This involved rebuilding the gardens (4: forced relocation). New contracts with the CoT and discussions on conditions for renting using the land followed (5: new contracts).

Regime level activity is characterised by a limited engagement with urban gardens in the pre-foundation period (however, due to the small number of initiatives and small garden space, there was little attention) (1 period). This was followed by a more active niche level of activity in 2016, which required decisions at the regime level (the search for land for the Emajõe Garden initiative) (2 period). The WoOp and the preparation of the city's zoning plan (CoT 2017) led to active cooperation between urban gardening activists and politicians (3rd period). There was a commitment from the regime to find land for gardening in the city, so that the gardens could be re-established (funding: Eco Garden car park; relocation of the

Emajõgi Garden garden house) (4 period). This was followed by the conclusion of contracts and the definition of the operational requirements of the gardens (5th period).

Landscape level changes have been influenced by the urban gardening movement in Europe, the transition town movement (impact on Tartu in the period 2016 - 2017), the EU migrant crisis, and the attention to the climate crisis in 2017-2018. However, further in the period are COVID and the health crisis, the arrival of Ukrainian refugees, food security, the energy crisis and economic decline. These crises have influenced citizens' choices, including the increasing importance of growing food in urban areas, which in turn has influenced the regime to organise land use for growing food in the city.

When does the WoOp open? (If) When does it close?

The window of opportunity for Tartu's urban gardeners opened in 2017. In August 2017, an in-depth discussion on urban gardening took place as part of the city's master planning process. Urban gardening activists raised the issue of the demarcation of urban garden land. The activists proposed to change the land use designation and convert the land used for urban gardens into urban garden land. It was also requested that the proposed road extension should not pass through an urban garden and that enough land be left around the gardens to allow for expansion of the gardens. In addition, also enough space should be left between the gardens and the open space to provide a buffer zone for both gardeners and residents. Urban garden land is regulated in the 2021 zoning plan adopted in October.

The window of opportunity closed in 2019, when the Eco Garden received a new plot of land from the city to develop and expand its activities. In 2018, Tartu Emajõgi Garden signed an agreement with the city to operate a community garden along the Emajõe river. Members focused on developing the garden, but some started developing the Repair Cellar. The activities of the garden activists were of interest to the city government in the window of opportunity, as during this period the international Food Urbanism Conference was held in Tartu, the Emajõe Garden activists cooperated with the city government in the framework of the CRISCO international project and dealt with the migration crisis by involving newcomers in the city garden, as well as the garden activists cooperated with Tartu universities.

Impact of regime-level events on the niche

Among the events that took place at the regime level, the **niche** was significantly influenced by the action of the city of Tartu to initiate a zoning process in the city in 2017. In the process of initiating the zone plan, the CoT organised a public exhibition, submission of proposals, several thematic and regional consultation meetings from March to September 2017. One of the most in-depth discussions took place at the CoT public hearing on urban gardens. As a result of the debate, a group of urban garden activists submitted comprehensive proposals to the city government regarding the regulation of urban garden land and garden boundaries.

5.4.6 References

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5.5 Solidarity and Renewable Energy Community of Napoli Est (IT)

5.5.1 Interviews

5.5.1.1 Documentation of application of the method

Table 5.5.1 List of interviews

Reference	Interviewee	Date	Length
R1	Local association and activists	29-09-2024	96min
R2	Partner of the CERS	30-09-2024	39min
R3	Political activists (focus group)	30-09-2024	67min
R4	Local civic committee	30-09-2024	67min
R5	Partner of the CERS	01-10-2024	51min
R6	Local political circle	01-10-2024	36min
R7	Partner of the CERS	30-09-2024	57min
R8	Partner of the CERS	30-09-2024	82min
R9	High-level representative of the Municipality of East Naples	01-10-2024	77min

The research team first contacted a Neapolitan researcher involved in CAI, who helped them reach the president of one of the Community of San Giovanni a Teduccio (CERS) local partners for an interview in Naples. During the visit, a CERS member also spoke briefly with the team, but the president clarified she couldn't involve other CAI members and didn't understand the media and academic interest in CERS, which she considered just one of many initiatives.

The team also attended a public meeting about CERS's three-year results and interviewed two other stakeholders (3eee and Legambiente). To broaden their understanding of the local socio-political context, they contacted the Je So' Pazzo Social Centre, which connected them to activists in San Giovanni a Teduccio. These contacts revealed a network of local ecological committees, offering alternative perspectives, sometimes aligned with and sometimes critical of the CERS stakeholders. They also interviewed the president of the East Naples municipality, who provided a dissenting view on the project.

San Giovanni a Teduccio, though small, is shaped by complex socio-economic and political dynamics rooted in post-WWII agreements that turned it into a fossil fuel logistics hub. This has caused environmental degradation, beach closures, and long-term pollution, contributing to a unique socio-political climate.

Interviews were conducted with care, combining structured outlines with contextual flexibility as suggested by project guidelines. Some stakeholders expressed skepticism about the project, the CAI case study, and university research in general. The team clarified that CO-SUSTAIN had no fixed agenda and that all perspectives were essential to shaping the research.

5.5.1.2 Results

Overall, the picture that emerged from the interviews was diverse and contradictory. The different institutions and collective actions we heard about presented different, and sometimes opposing, interpretations of the problems of the neighbourhood, of local and international energy policies and dynamics, and the significance of both the CERS and the actions of its members in the local area. Field research has, therefore, made it possible to acquire data that was absent from the analysed textual apparatus. None of the journalistic reports or scientific publications studied report the conflicting relationships that exist in the neighbourhood around the role of the large private fossil fuel players in the area and the collective actions that need to be taken, at a social, socio-technical or institutional level, to stop the colonisation of the water and the coastline, to give the sea and the beaches back to the city and its inhabitants, to create more dignified social relations and relations with the territory in east Naples.

Overall, the committees, political organisations and associations external to the CAI under examination (which therefore constitute other CAIs, related to it but distinct: Libera, Comitato dei cittadini di San Giovanni a Teduccio, Maestri di strada, Comitato ExTaverna del ferro, Casa del popolo di San Giovanni a Teduccio) have all expressed their perplexity about the CERS and the media attention it has received in recent years. Although with different nuances, an overall judgement has emerged, based on several shared elements: (1) One of the SHs involved in the CERS, the Associazione Famiglia di Maria, has links with Q8², considered responsible for the environmental pollution of the coast; (2) the social impact and the significance of the socio-technical and socio-economic innovation of the CERS have been exaggerated by the press reports; (3) the very activation of the CERS in the association's premises is due to the president's connections with important political and financial actors in the city. This judgement, albeit with different nuances, was also expressed by a high-level member of the Municipality of East Naples, the municipal institution that includes the areas of Ponticelli, Barra, and San Giovanni a Teduccio (Cerotto 2010; Coppola, Sica 2023).

This judgment was not, of course, formulated in the same terms by the HS involved in the CAI, who nevertheless did not hesitate to provide a more multifaceted picture than that which emerged from the TA, especially concerning non-scientific publications. As already mentioned, the Famiglia di Maria Foundation showed astonishment, if not perplexity, at the political, scientific, and media attention given to the CERS. The main focus of this attention was the shared financial output, i.e., the few hundred euros that were returned to families after the first two and after the first three years of activity. The description of the savings redistribution process highlighted the extremely hierarchical nature of the CERS, whose assembly was described in rather crude terms as the place where the president of the association announces the amount of savings to be redistributed and the transfers to the families' accounts by the CERS. The CERS member who took part in the conversation, on the other hand, repeatedly expressed disappointment at the amount of money saved, although she emphasised that she was happy to 'do something good' by using clean energy.

In this regard, the two interviews conducted with Legambiente, which was the first to conceive and promote the initiative, were enlightening. Legambiente is a large political organisation that has been fighting social and institutional battles for environmental protection in Italy for decades. Initially close to

² Kuwait Petroleum Italia (KUPIT), commonly known as Q8 Italia, is the Italian division of Kuwait Petroleum International (KPI). Since 1984, it has been distributing fuels (diesel, gasoline, methane, LPG), lubricants, and other petroleum products in Italy under the Q8 brand.

the Italian Communist Party (which ended its existence in 1991), it is a non-partisan organisation with an ecological and progressive culture and a strong presence in the Italian institutional framework. The interview with a top representative of Legambiente Campania not only allowed us to retrace the founding phase of the CAI but also provided a more articulated socio-political interpretation of its significance. According to Legambiente Campania, it is clear that the socio-economic impact of CAI is practically zero. Its environmental impact is also far from significant. What is decisive, in the organisation's opinion, is its potential impact in cultural terms, that is, to use the words of the interviewee, in terms of 'energy literacy'.

Furthermore, according to Legambiente, the criticisms levelled by the president of the Municipality of East Naples at the CERS, judging it irrelevant in the socio-economic panorama of the territory, which is supposedly afflicted by more important problems, are short-sighted. Legambiente accuses the Municipality of having revealed its irresponsibility concerning the green transition by opposing the installation of photovoltaic systems in its territory. The president of the Town Council had presented this initiative as contrary to the interests of residents due to its invasive nature, but Legambiente stated that 'sooner or later the green transition must be made' (R2) and that for this reason, it is necessary to sacrifice some interests to move forward concretely. The association also said that it appreciates the activity of the neighbourhood's ecological committees and that it has carried out a series of important activities with them, for example for the protection of the coastline. However, they do not agree with the criticisms of the CERS, which should instead be encouraged, also from a communicative and media point of view, to promote an idea of citizenship that has yet to be realised, but that these small examples can help to make known and strengthen.

The interviews with Legambiente have also clarified some differences between the stakeholders involved in the CAI. According to Legambiente, the local committees' criticism of the Associazione Famiglia di Maria for its relations with the multinational company Q8 (consultancy and advertising campaigns) is correct. The association, according to Legambiente, should sever these ties, which do not concern the CERS but only one of its partners and for activities unrelated to the initiative. On the other hand, Legambiente claims that popular mobilisation against Q8, which, according to the Naples prosecutor, is responsible for the illegal dumping of tonnes of sewage into the sea of San Giovanni over the last decade, is not enough. Lobbying is needed to persuade Q8 to convert its economic activities into green and eco-compatible activities, as happened with ERG (acronym for Edoardo Raffinerie Garrone, an Italian oil industry that is now a leader in the renewable energy sector). Legambiente has therefore shown that it has a clear position on all the issues concerning East Naples, starting with the CAI under examination, which differ from those (a) of the local institutions; (b) of the other SHs involved in the CAI; (c) of the other environmental organisations in the area.

It is only based on the qualitative data collected in the field that it was possible to understand the dynamics in the field and produce an MLP and an SM that the TA alone had not enriched with these elements. The very definition of the CAI's objectives and its phenomenological description changed following the field research, as did the relationship between collective action and the socio-political innovation niche. Thanks to the combination of TA and field research, it was possible to define the CAI's objective as mainly propagandistic and, as far as the families involved were concerned, as one of political acculturation even before financial. However, this attitude did not come up in any of the interviews carried out, at least not in positive terms. Both the local committees and the Town Hall denounced the propagandistic dimension of the creation of the CAI in that specific context as a limitation, while Legambiente, recognising it in substance, framed it in a positive process of communication and education on energy sustainability.

The Famiglia di Maria Foundation, insisting on the financial redistribution aspect and showing perplexity for the public attention towards the CERS, showed that it was not as clear as Legambiente on the meaning attributed to this initiative (which it promoted both to the association and the financing body, Fondazione per il Sud). On the contrary, the decision to offer consultancy services to Q8 and to use vehicles with the multinational's logo shows that the association is not on the same page as Legambiente, according to which no collaboration with Q8 should be undertaken until the corporation has completely converted to green. Despite the positive publicity provided by the media and the political coverage of various parties (primarily the Democratic Party), the political contradictions of the ecological initiative of the Famiglia di Maria association emerge from the mistrust shown towards it by all the civic and political actors involved in mobilisations for environmental protection interviewed in the area. The risk of such operations is that they are perceived as forms of greenwashing for the benefit of the large fossil fuel companies that have been present in San Giovanni a Teduccio and the Gulf of Naples for almost a century.

Like the textual analysis, the interviews also showed the involvement of this HE with issues related to climate change. All the contradictions relating to the climate and environmental challenge and the ecological transition are present in this area: the fossil colonisation of the natural and anthropised environment, the attempts to mobilise human intelligence and energy to get rid of it, the emergence of illegal capital and its control of the territory, the penetration of different socio-political actors driven by different ideas for ecological solutions and energy transition and the attempts to renew the physical and financial presence of the fossil giants through greenwashing strategies. In this sense, it is crucial for the understanding of HE to clarify that the socio-political innovation niche cannot be identified with the CERS, i.e., with the CAI under examination. In the Italian HE concerning the Genoa floods, a variety of CAIs were analysed to discover the elements of profound innovation proposed and promoted by one of them (which was therefore considered a niche in the MLP). In the Italian HE concerning Naples and the CERS of East Naples, on the other hand, the analysis of a CAI made it possible to identify (also thanks to the data collected by listening to other CAIs in the area) differences and contradictions in its composite internal structure.

As a result, we can state that the socio-technical innovation already in place (production of photovoltaic energy through panels and energy community) was promoted in a particular context as part of a complex socio-political innovation plan by one of the social housing organisations involved in the CERS, the one that conceived and promoted it: Legambiente. The other SHs contributed with capital (Fondazione per il Sud) and technical expertise (3eee) by providing the architectural structure and involving a limited number of families in the neighbourhood (Associazione famiglia di Maria). Regarding the SM, the interviews made it possible to relate the CERS to other CAIs, as well as to the institutions and SHs involved, and to clarify that the battle against the Q8 waged by the neighbourhood, but also by the political institutions and the local judiciary, produces an ambiguity when the SH most exposed to the media among those involved in the CAI does not participate in it and does not support it. Concerning the MLP, the interviews made it possible to circumscribe the contours of the process more appropriately, starting from a better definition of the niche and the socio-technical and socio-political landscape.

5.5.2 Textual Analysis

5.5.2.1 Documentation of application of the method

The textual analysis started in July 2024. It primarily concerned material taken from the local and national press to frame the order of events and the impact of the CAI - the Energy and Solidarity Community of San

Giovanni a Teduccio (CERS) - on the territory, on the local and national socio-political and socio-technical regime, and the institutional and social perception of the energy transition. The textual corpus included local newspapers, national newspapers (often analysed in their respective local pages), and national monthly magazines. Secondly, relevant web pages were analysed to consider the point of view of specific Stakeholders on the CAI under examination. In this case, these were websites and blogs compiled by local or national associations in their local branches; personal pages on social media attributable to prominent figures in the neighbourhood or city of Naples; and social pages relating to Neapolitan associations and local authorities.

The second textual apparatus that was analysed is that of scientific publications. First of all, it was noted how a vast number of publications, usually of a sociological nature, mention the CERS in the context of a broader examination of energy community experiments following the most recent European directives. The scientific literature on the CAI analysed by CO-SUSTAIN in Italy, in particular, is less extensive. However, there are some extremely interesting publications, and in particular, two publications that have been considered pilot articles. They critically address the birth, evolution, and impact of the CAI on the territory, in one case also carrying out a stakeholder analysis. Alongside the analysis of scientific publications, the team, which includes specialists in the study of energy communities, has reviewed or analysed the most important legal provisions for the Italian and European regulation of the creation and management of energy communities and part of the vast scientific literature on the very definition of energy community. For these purposes, the UNITO team was able to benefit from the previous activity and review of the literature carried out concerning the HEU COMETS project.

After this first phase of textual analysis, a field expedition helped to define the research and, therefore, prompt a second phase of textual analysis. As will be explained below, in fact, the field research allowed the team to familiarise themselves with the San Giovanni a Teduccio neighbourhood (and, incidentally, with the nearby Ponticelli neighbourhood) and to conduct numerous interviews with institutional figures, officials, activists and technicians involved in the CAI or in other CAIs connected to it via a dense and complex socio-political network concerning the battle to improve the environmental conditions of the neighbourhood and its coastline. The first piece of information to share in the research report is that the acquisition of the points of view of the citizens, associations, and committees of the neighbourhood radically transformed the idea of the socio-environmental impact of the CERS. They also allowed us to appreciate the multifaceted political role of one of the main SHs involved in the CERS, the Associazione Famiglia di Maria. Finally, they allowed us to better clarify the relationships between the different SHs that contributed to the creation of the CAI, and to understand an original element of this HE: in this case the CAI is not identified with the niche, which is instead constituted by one of the SHs that contributed to its realisation.

This was followed by a second phase of literature review and textual analysis of web pages related to the SHs interviewed inside and outside the CAI under examination, but always in the territory under examination, and always involved (together with the CAI or, sometimes, in substantial opposition to it) in battles for the environmental redevelopment of the territory of East Naples. This phase has allowed us to reconstruct in greater detail extremely important socio-political dynamics, first and foremost the allocation of European funds for the eco-sustainable redevelopment of other portions of territory neighbouring the CERS, including the so-called 'Bronx' or the former Taverna del ferro, a dilapidated complex of council houses for people displaced by the 1980 earthquake, and a nearby institutional building. Although these are not energy communities, these projects have been presented by some SHs

(even of a very different nature) as demonstrations that the CERS is not unique in the slow but concrete eco-sustainable transformation of the territory.

The analysis attempted to discern the dynamics of subjectivation and objectivation present in the textual apparatus and to make general classifications of the texts based on this discernment. For each textual element, we asked ourselves the question: Who is speaking? Who is being spoken to? This was the first step, in addition to considering the 'nature' of the text based on a general classification of an ordinary type: journalistic, scientific, legal-institutional, expression of collective actions and socio-political movements. Once the character and subject-object dynamics inherent in each element had been established, we proceeded to analyse the historical-factual dimensions contained in the texts, trying to distinguish them from the more normative or critical ones, i.e., those linked to the articulation of a judgement. The latter were initially analysed in their explicit forms and then in their latent ones. Combining the results of this second part of the analysis with the first part allowed us to appreciate elements of tendency that are very useful for analysing the historical case. The results took on a completely new light once combined with those of the analysis of the interviews and field observations.

5.5.2.2 Results

What characterises the CAI in question is the large amount of media attention it has received. Since it was set up, the CERS in Naples has received considerable attention from the local and national media. This was certainly helped by the fact that it was the first Italian energy community after the publication of the adaptation of the national legal framework to the new European directives on the subject. However, this would not be enough to explain either the quantity or the tone of the journalistic texts published about the CAI since 2021. It is more related to the socio-political characteristics of the context rather than the socio-technical ones. The entire journalistic text insists on the innovative character of an eco-sustainable socio-technical proposal because it was started in a socio-politically delicate urban area. The area of East Naples is largely considered by the political and media world as 'difficult' due to the strong presence of organised crime (the network of illegal economy and drug trafficking, called 'system' by those who run it and often 'camorra' in common parlance).

The textual apparatus under examination has shown that this 'difficult' character of the territory is systematically connected to the condition of poverty and deprivation of a large part of the resident population. The narrative of all sources on East Naples is, therefore, partly characterised by a concern for and empathy with its population, at least apparently; on the other hand, it can present the traits of a sort of neocolonial paternalism, where a disadvantaged humanity is unable to lift itself because it is held hostage by criminal gangs. The textual analysis had to take into account these contextual elements, which emerge and re-emerge throughout the text, and their profound significance in Italian history. If in the immediate post-war period even mentioning organised crime (at the time more rooted in the south) was considered a taboo by the media and the political parties in government, the progress represented by the public discourse on the mafia (of which, in a broad sense, the Camorra or Neapolitan system are considered specific expressions) has recently been subjected to a critical analysis that institutional ethnography could not fail to take into consideration.

The research team carefully analyzed the overall narrative about the CAI and noticed that the territory was often described in a flat and static way. Only the effort of one of the stakeholders who supported the CERS (the Fondazione Famiglia di Maria) seemed capable of challenging or changing this view.

The Foundation is therefore described in positive or enthusiastic terms, usually through the words of its president or some of the women who frequent its headquarters, often to bring their children to the after-school programme the foundation provides and which is one of its most important activities. Several reports of the association's activities also mention that its headquarters were shot at during the period in which the CERS was established. However, no causal link between the attack and the creation of the CERS has emerged from an analysis of the available texts.

In general, the Foundation and, therefore, the CERS are presented as elements of 'legality', 'solidarity', and potential civic and social progress as opposed to the criminal or illegal dynamics present in the area. The articles analysed also refer to the economic advantage that the CERS may bring to the residents involved, who live in unfavourable economic conditions. They also mention the other social housing organisations involved in the initiative, namely Legambiente, the company 3E and the Fondazione per il Sud. It is worth noting that we did not notice any particular differences between the description of the CAI produced by the media and that which can be inferred from the websites of the social housing organisations involved.

A somewhat different picture emerges from the scientific publications that chose the CERS as a specific case study. Although the peculiar socio-political context of the neighbourhood is mentioned in the reconstruction offered by the articles analysed, much less emphasis is placed on this aspect. The dramatic or paternalistic tones that sometimes permeate journalistic production on the CAI and its territorial context are missing. On the other hand, both articles dedicated to the CERS emphasise two aspects: (1) the limited social impact of the CAI on the neighbourhood, quantifying the community members in about ten residential units in all; (2) the difficulty encountered by the researchers in interacting directly with these families, and in any case without the presence of the president of the Foundation Famiglia di Maria. Although both publications maintain an academic tone of evaluation, the analysis of the texts clearly shows that the Neapolitan researchers are cautious in positively evaluating the real social impact of the CAI in the San Giovanni neighbourhood. This evaluation was confirmed by the discussion the team had during a panel at the Conference of the Italian Society of Economic Sociology, which was attended by several competent researchers in the field.

5.5.3 Social Network Analysis

5.5.3.1 Documentation of application of the method

The Social Network Analysis (SNA) was conducted in two main phases. The first phase drew on Deliverable 1.2, which focused on contextual and stakeholder analysis. This initial step allowed for the classification and categorisation of stakeholders. The second phase built upon data collected through textual analysis and semi-structured interviews, enabling the identification of both cooperative and conflictual relationships among actors, as well as the types of resources exchanged.

Figure 5.5.1 is a visual representation of these relationships during the "window of opportunity" (2020-2024), which coincides with the normative development of renewable energy production and consumption in the national context. Looking at this legal framework, Legambiente is a node in the system. The association had the idea to engage local key actors to create the CERS in Naples East. Moreover, Legambiente was the first to intend energy transition as a form of political empowerment for the district and an opportunity to improve the overall quality of life of the families taking part in the project.

In this context, the other nodes are represented by regime policy institutions collaborating from a regulatory standpoint. Financially, the key stakeholders include major fossil fuel producers based in Napoli Est and operating in the oil trade—Q8, Edison, and Darsena Petroli—who maintain both cooperative and conflictual relationships with the CAI.

One of the primary challenges the analysts encountered was gaining access to the CERS and understanding the relationships created within the border context, relationships monopolised largely by the Famiglie di Maria Foundation. Furthermore, the in-depth fieldwork analysis revealed tensions between the Foundation and other local organisations, which are not particularly supportive of the newly formed CERS. This scepticism stems partially from CERS's collaborative ties, which involve exchanges of human and moral resources with major oil companies.

5.5.3.2 Results

Niche

Renewable Energy Communities (CER) represent 'socio-technical' energy transition initiatives aiming at engaging different stakeholders in the production and consumption of local energy. The CERS in Naples East complied with the implementation of Legislative Decree 199/2021 and was fully developed with the last CER Decree (MASE No. 414 of December 7, 2023), which is a measure that promotes the establishment and development of Renewable Energy Communities (REC) in Italy. It came into effect on January 24, 2024. In 2021, the East Naples Energy (and Solidarity) Community (CERS) was established through a partnership between key local stakeholders: Legambiente, Famiglie di Maria Foundation, con il Sud Foundation, and the company 3E. The local community, not particularly sensitive to energy-environmental issues, directly benefits from the social action and day-to-day support provided by the Famiglie di Maria Foundation, active since the 1800s. The project has two primary objectives: (a) a technical-operational goal aimed at promoting renewable energy production and consumption for a sustainable transition, and (b) a socio-cultural goal, focusing on environmental education and active citizenship. The relations among the project partners are cooperative and mutual. The resources shared are primarily moral, cultural, and material (Magnani, Scotti, 2024).

By broadening the research field to include other stakeholders present in the area, such as the San Giovanni a Teduccio Civic Committee, the former Taverna del Ferro Committee, and Maestri di Strada association, a latent conflict/neutral relations emerge between the Famiglia di Maria Foundation, which holds leadership in the CERS, and other civic and associative entities active in the area. The latter recognises the socio-technical innovation brought by the energy community but considers the leading partner, Famiglie di Maria Foundation, unfavorably, concerning its close ties with politicians and its pivotal role in selecting the families to engage. Moreover, the latter also involved financial regime stakeholders such as H12 petrol players, even though the petrol business and environmental damages were in the port area of East Naples. As regards Legambiente, the association values the work carried out by local ecological committees and the initiatives developed in collaboration with them, such as efforts to safeguard the coastline. However, it disagrees with the criticisms directed at the CERS, which should instead be supported and highlighted in terms of communication and media visibility, as they represent a pathway toward a still-emerging concept of active citizenship. These small-scale initiatives can play a key role in raising awareness and giving strength to that vision

Regime



The regime includes the Municipality of Naples and the Campania Region (SH5, SH6), which directly hindered (SH5) and supported the establishment (SH6) of the CERS. The regime also comprises national and international actors that are not included in the system, such as the Italian government and European Commission, which issued normative texts to integrate the energy transitions within the national legislative corpus.

At the financial level, key stakeholders are SH12 Petrol Players, which maintain cooperative relationships with the municipality, as well as with certain CAI members, such as Famiglia di Maria Foundation (SH9)

The major oil companies are involved in illegal waste trafficking and industrial wastewater discharge with a high risk of environmental disasters, even though there is collaboration and exchange of resources with the municipality and members of the CAI (SH5, SH9).

Niche and Regime Interaction

The relationships between the CAI and the regime are both conflictual and cooperative, depending on the stakeholder in question. Few relationships are neutral, meaning they do not lean toward either cooperation or conflict. For instance, the relation of SH12 with CAI members is unclear despite the cooperation with SH9, the Famiglie di Maria Foundation, which in turn does not clarify its relationships with other grassroots groups in the district.

Some divergences between niche and regime concerned the alleged building violations by the Municipality of Naples to the Famiglia di Maria Foundation. The technical officers requested a regional-level environmental permit concerning landscape constraints to permit the installation of photovoltaic panels on the Foundation's roof. This process highlighted a legal vacuum in the meantime of the local translation of European normative frameworks, as there were no clear implementation rules to follow. The request was subsequently forwarded to the regional offices (under the presidency of Vincenzo De Luca, PD), which took responsibility for initiating the procedure. According to point A6 of Presidential Decree 31/2017 on simplified landscape authorisation, the installation of photovoltaic panels is possible without landscape authorisation on flat, non-sloping roofs, as in the case of the Foundation's roof.

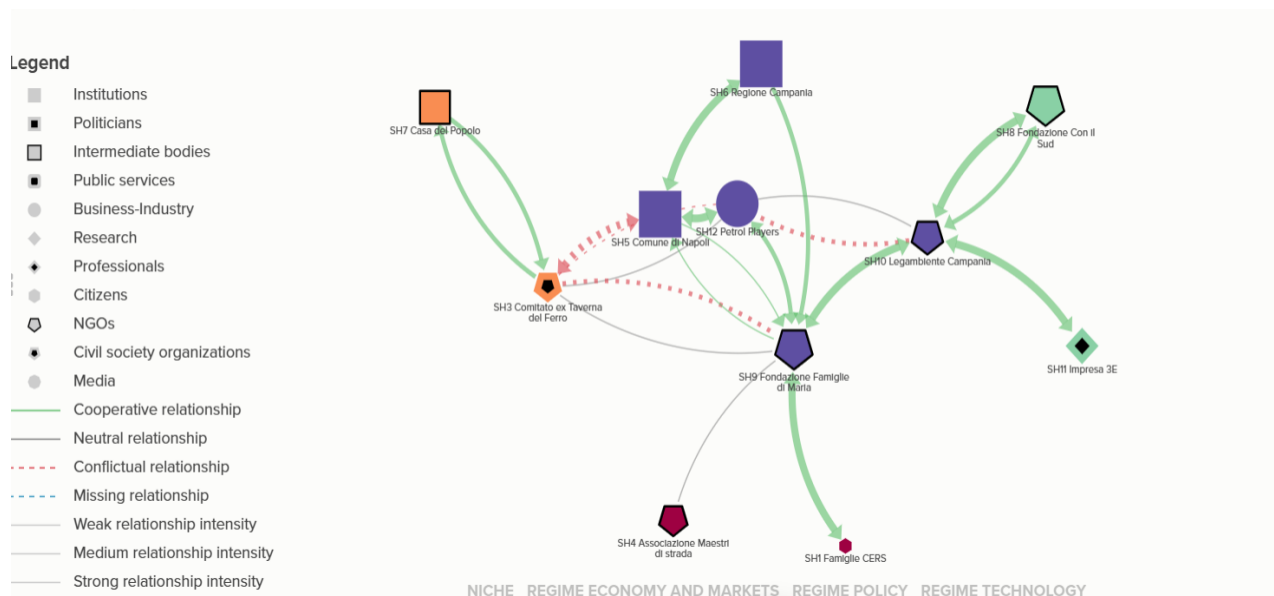


Figure 5.5.1: Social Network Analysis (SNA) of the Historical example

5.5.4 System Mapping

5.5.4.1 Documentation of application of the method

The UNITO team first analysed the literature on system mapping (SM) recommended by the consortium experts and then followed the online training provided by CO-SUSTAIN. These were supplemented by the face-to-face training received from the BOKU team during the General Assembly in Granada. Meanwhile, in an initial phase, the team tried to practise by producing provisional CLDs, on the niche and the regime, trying to reproduce archetypes. These first versions were analysed and discussed within the consortium. In the last phase, the team produced the overall SM, separated into niche and regime, identifying different causal processes and their interrelationships.

5.5.4.2 Results

Niche

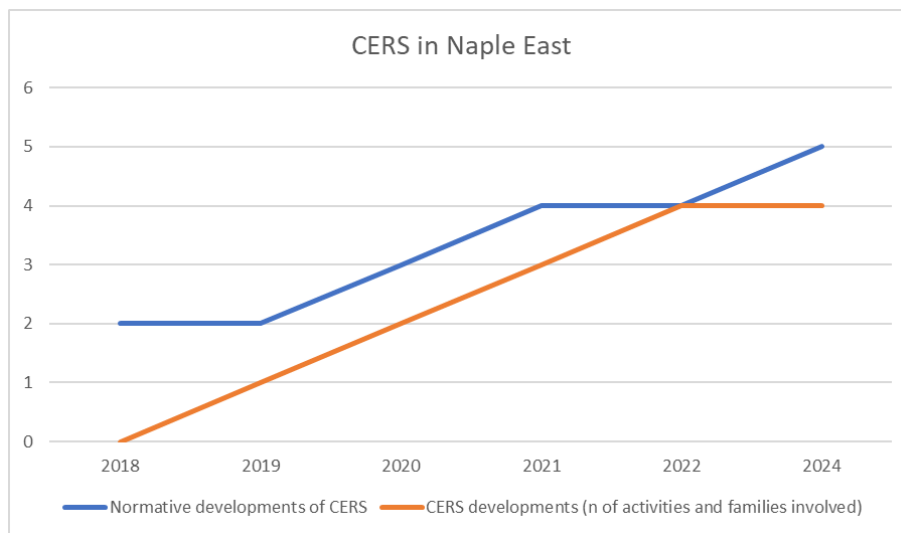


Figure 5.5.2: Graphic of Niche patterns

The causal process originates from three specific factors. The first is the incorporation of the European directive on energy communities into Italian law, which opens a window of opportunity because it produces a climate of interest in this type of project among financiers and civil society organisations. During an online meeting, Fondazione con il Sud, an important bank capital fund interested in promoting initiatives in southern Italy, asked the associations present if there were any innovative ideas and projects in which to invest. Legambiente, which already intended to promote a CERS in the city of Naples, took the opportunity to make this proposal. This set in motion a process of involvement of the 3eee company and the Associazione Famiglia di Maria. The latter, with its contacts among the families of the San Giovanni - a Teduccio neighbourhood - could, in fact, both make its premises available and involve residents in the project.

The second causal process originates in the creation of a series of committees and political collectives in San Giovanni a Teduccio that set themselves, among other objectives, the battle against environmental pollution in the neighbourhood and, in particular, against the fossil giants that have been colonising the land and sea for decades. This plethora of committees has led to various battles and a process of substantial unification of the neighbourhood committees. This unification process, based mainly on opposition to the liquid gas storage site promoted on the coast by Q8, increases ecological awareness in the area, but is limited by two factors. The first is the disagreement between Legambiente and the other committees on the advisability of building a wind farm in eastern Naples. The second, which appears more important, is the neutrality of the Associazione Famiglia di Maria towards the LNG project, probably due to the economic support that Q8 offers to the association. Since the association is the SH of the territory involved in the CERS, this produces a climate of mistrust and scepticism towards the CERS itself on the part of the other environmental committees. Legambiente itself, promoter of the CERS, does not share the position of the Associazione Famiglia di Maria towards Q8's initiatives in the neighbourhood and the GNL project.

The third causal process begins with the collective action of the committee fighting for the Ex Taverna del Ferro, a dilapidated housing complex located a few metres from the CERS, where families who had been affected by the Irpinia earthquake in 1980 were rehoused. Over the decades, poor families have joined them, occupying apartments, among which some Marxist militants have found space. This political

inclination led them to involve a communist artist in the decoration of the complex's walls with murals, which attracted media attention to the social and housing problems of the neighbourhood. This attention was also motivated by a visit from former mayor De Magistris to San Giovanni a Teduccio, which the protesters had led to ascertain the infiltration of water and humidity in the building. The committee was subsequently involved by the new municipal administration in an overall redevelopment process financed with PNRR/Next Generation EU funds. The project was designed in a participatory manner together with the committee and involves the demolition of the complex and the construction of eco-sustainable housing units with solar panels. The importance of this experience for the neighbourhood is also demonstrated by the initial decision of the CERS to include the former Taverna del Ferro in its logo. However, the committee tends to distinguish the activity of the CERS, which it approves of, from the links of the Associazione Famiglia di Maria with Q8, which it disapproves of.

The overall causal process regarding the niche, therefore, concerns the CAI represented by the CERS. Among the SH involved in the CERS, the niche is specifically represented by Legambiente, which conceived the initiative involving the other SH. Other CAIs (environmental committees and the committee of the former Taverna del Ferro) are taken into consideration to determine the mobilisation context of social activation that has produced results in terms of increasing social awareness regarding energy transition. The picture that emerges presents some significant contradictions: while the environmental committees interviewed only support decentralised and non-invasive forms of renewable energy production, Legambiente is also in favour of greater centralisation of solar energy production, for example, the construction of a wind farm in eastern Naples (which the other committees oppose). Legambiente confirms its position as a niche for innovation by having promoted the CERS, having the ability to influence the regime (of which it is in some way a part, having historically assumed an important role in Italian institutions) and having a well-structured and coherent line concerning the diversified policies that must be undertaken in the area of renewable energy. Legambiente shows that it has also made a clear assessment of the concrete aims and results but also of the limitations of the CERS of Naples East. A further element of contradiction concerns the eccentric position of the Associazione Famiglia di Maria (SH of the CERS) in the local dynamics of mobilisation for a different energy and environmental policy. While the committees and Legambiente oppose the presence and influence of Q8 in the urban area and along the coast, the association does not oppose the multinational and has collaborative relationships with them.

In general, the increased energy awareness in the neighbourhood is due to the activity of the CERS, the redevelopment project of the former ironworks, and the unification of local environmental battles against the interests of fossil fuel multinationals. However, this latter process is being undermined (1) by the opposition of the committees to wind farm projects and (2) by the collaboration of the Associazione Famiglia di Maria with Q8.

<https://kumu.io/davidegrasso/he-napoli#naniche2/proposal-by-legambiente-to-fondazione-per-il-sud-for-the-creation-of-an-esco-in-east-naples>

Regime

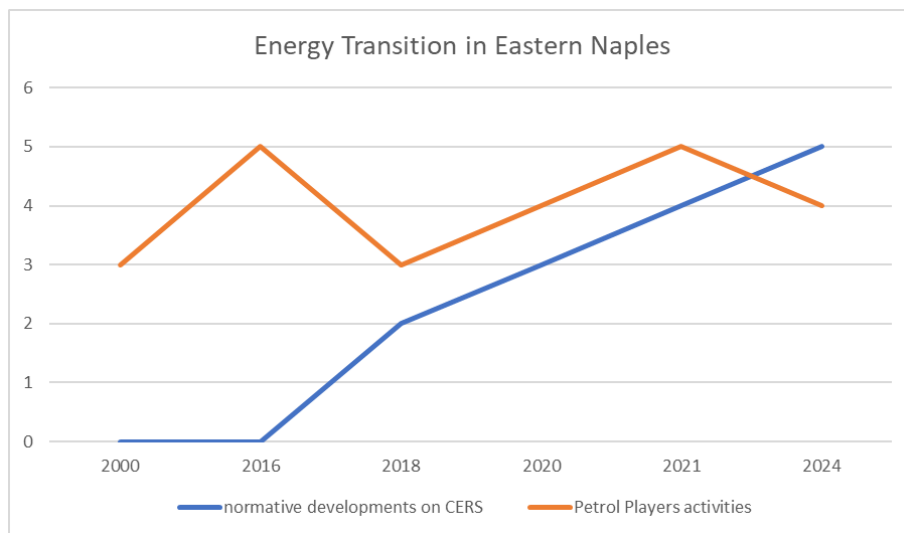


Figure 5.5.3. Graphic of Regime Patterns

The causal processes that represent the dynamics concerning the regime are complex. They can be divided into six processes.

The first concerns the agreements made between the Allied forces during and after the Second World War. These agreements provided for actions in favour of logistics for the fossil fuel industry in the Mediterranean, with the construction of ports that would function as commercial hubs and for the storage of fossil energy resources. Italy contributed to this international geopolitical dynamic, among other things, by designating the Naples area for this purpose, and, in particular, the new port of San Giovanni a Teduccio, which became an area of national strategic interest subject to strict military surveillance and a ban on access to most of the bathing area and beaches. This activity has resulted in the pollution of the beaches, the water, and the air, the removal of the land and the sea from the residents, and a very strong political influence of the fossil fuel multinationals on the neighbourhood and the city. All this has contributed to a decrease in the quality of life in East Naples.

The second and third concerns the industrialisation of the urban area of East Naples before and after the Second World War and the progressive de-industrialisation in the last phase of the 20th century. Both processes contributed to creating the disadvantaged social conditions (due to low wages, pollution, and unemployment) in the area. The economic poverty of the residents has favoured the establishment and growth of illegal commercial activities, which in turn have strengthened paramilitary clan structures known in Campania as the 'system' or 'Camorra'. These phenomena have contributed to lowering the quality of life in eastern Naples and have sometimes triggered legal action. Some of the consequences include: (a) a widespread climate of distrust of the various forms of power and of the institutions themselves, (b) a decrease in confidence in the possibility of change, and (c) the seizure of properties from organised crime, which has given rise to an association against the mafias, Libera Campania. Compared to other branches of Libera in Italy, Libera Campania shows a progressive character and wants to be linked to a variety of socio-political initiatives in eastern Naples related to the environmentalist left. Several associations have found a place alongside Libera in the buildings seized from the Camorra, and several committees are supported by Libera in their action against Q8's projects on the coast and, in general, against the fossil colonisation of the territory. Legal action has also been taken against Q8, with the accusation of illegally

spilling a large quantity of toxic sewage into the sea at San Giovanni a Teduccio. This legal action has strengthened the arguments against Q8 and fossil colonisation used by the neighbourhood committees.

A fourth factor that has caused a lowering of the average quality of life in eastern Naples is that many families who were made homeless by the Irpinia earthquake in 1980 were moved to this area. These families were placed in various dilapidated public housing complexes. In San Giovanni a Teduccio, in particular, the Ex Taverna del Ferro complex was built. It was later nicknamed 'Bronx' by the residents due to the difficult living conditions there. In addition to the poverty and the terrible architecture, over the decades, water infiltration has created an unhealthy environment that is barely habitable.

The regime is also characterised by the political and economic investment in the energy transition, which takes various forms, three of which are relevant to the hydroponic growing technique in question.

The first is the Italian government's action to build wind farms in the area. In recent years, the Campania Region and Parthenope University of Naples have tried to promote these projects, which can produce clean and renewable energy, but at the price of a significant environmental impact. For this reason, while national and regional institutions are in favour, the Municipality of East Naples declares itself to be opposed.

The second is the European directive on energy communities that the Italian state has translated into national law. This has opened a window of opportunity for the creation of the CERS in East Naples, thanks to the niche initiative of Legambiente.

The third is the component of the Next Generation EU funding line linked to the green transition. These funds, also allocated to the Municipality of Naples through the Italian National Recovery and Resilience Plan, have been partly allocated to the eco-compatible redevelopment of the former Taverna del Ferro area through a participatory process with the residents' struggle committees.

Concerning the historical legacy of East Naples, characterised by (a) a harsh fossil colonisation with consequent pollution, (b) high rates of poverty and conflict between the state and organised crime, and (c) terrible housing conditions for part of the population, public funds allocated to renewable energy and eco-sustainable building produce a scenario in which the regime tries to adapt to the climate imperative (not without internal contradictions, such as those related to the issue of wind farms). Private funds, such as those of the Con il Sud Foundation, also allow the exploitation of windows of opportunity, such as that represented by the new legislation on energy communities, when niches of innovation identify contexts and potential for the creation of new initiatives such as CERS. Overall, albeit in a limited way, both the ecological redevelopment of the former ironworks and the creation of the CERS contribute to improving the quality of life in eastern Naples and to raising awareness of the need for and characteristics of the green transition.

<https://kumu.io/davidegrasso/he-napoli#naregime2>

5.5.5 Summary and Conclusion

5.5.5.1 Origin & Evolution of HE

The CERS in Naples East was founded in 2021 by the Associazione Figli di Maria and Legambiente, with funding from the Fondazione per il Sud and technical support from the company 3eee. The initiative was also supported by the Campania Regional Authority.



San Giovanni a Teduccio is an economically, socially, and culturally fragile area in the eastern part of Naples. Once a working-class neighbourhood, it is now heavily compromised and largely under the control of organised crime. The families involved in the project were initially not particularly engaged with energy or environmental issues. Their interest gradually developed thanks to the trust-building, social action, and daily support provided by the Famiglia di Maria Foundation, which has long been active in the area.

The project has a dual objective: on one hand, it aims to promote the production and consumption of renewable energy as part of a sustainable transition; on the other, it focuses on environmental education and the promotion of active citizenship with strong social and cultural dimensions.

In 2021, a 53-kW photovoltaic system was installed on the Foundation's roof, made possible by the technical expertise of the 3E company and the funding provided by the Fondazione Con il Sud (a total of €100,000, with 50% covered through the ecobonus via invoice discount and credit transfer to the companies involved). During this initial phase, the project faced some obstacles. At the national level, the GSE (Energy Services Manager) struggled to process the recognition request for the energy community due to a lack of clear national regulations on the matter. Locally, the City of Naples hindered the process by accusing the Foundation of an alleged building code violation. The municipality demanded a regional-level environmental authorisation due to landscape constraints to approve the panel installation, highlighting a lack of technical capacity in the municipal offices in the absence of clear implementation guidelines. These bottlenecks were mostly technical and bureaucratic rather than political, although Mayor Gaetano Manfredi had publicly expressed his support for the initiative. The request was then approved by the Region of Campania (under the presidency of Vincenzo De Luca, Democratic Party), which took responsibility for initiating the process. According to point A6 of Presidential Decree 31/2017, simplified landscape authorisation is not required for photovoltaic installations on flat, non-visible roofs, such as the one in question.

While waiting for regulatory clarity, Legambiente continued engaging participating families through environmental education initiatives, keeping their involvement active. The role of Legambiente is pivotal in accelerating a socio-political innovation along with the socio-technical one. By being prosumers, citizens become aware of their energy production and consumption, share their knowledge with other families, and improve the quality of life in the neighbourhood.

Some of the key aspects important to highlight in the CERS' evolution are:

1. The concept of solidarity within the CER(S): annual savings from shared energy consumption are distributed equally, rather than equitably, raising concerns about how solidarity is being implemented.
2. The democratic governance of the project: It is not clear how community assembly is organised and practised, particularly given the central role of the Famiglia di Maria Foundation in the process.
3. Monitoring and impact assessment: Investigations have not gathered significant data on family energy consumption and the impact of the CERS on the environmental and social fabrics.

5.5.5.2 Organization & Activities of HE

The activities of the Renewable Energy Community (CERS) are structured around the specific expertise of each project partner. The Famiglia di Maria Foundation, in collaboration with the City of Naples and the Fondazione Banco di Napoli per l'Assistenza all'Infanzia, plays a pivotal role through its centre. The

Foundation works to uphold the right to education and training by integrating school and educational programs with tailored social and educational services that address the individual needs of the children it supports. This includes the development of individual educational plans, support for regular school attendance, and the organisation of cultural, sports, and recreational activities. The Foundation also provides guidance and counselling services, meals, and learning materials and supplies for both academic and leisure activities. The Foundation's key role in the CER(S) project stems from the strong relationships of trust built with the mothers of participating families over time. The Foundation is also expanding the network of stakeholders by cooperating with major oil companies, such as Q8, in promoting educational courses for Social Innovation Managers (SIM) aimed at strengthening the professional skills of Third Sector operators in Naples and supporting them in generating increasing social and environmental impact in the local area.

Legambiente is responsible for delivering environmental education workshops and activities, encouraging mothers to engage with one another and reflect on environmental issues starting from their daily experiences, thus fostering awareness and shared learning.

The company 3E has been essential in managing energy monitoring and translating technical concepts into accessible language for the families. Their role has been crucial in explaining the purpose and benefits of the CER(S) within the community context, particularly the potential to reduce energy consumption and promote the use of renewable energy in response to the climate crisis.

The project is still ongoing, and its long-term impact is not yet fully measurable. However, the recent 2023 Renewable Energy Communities Decree has introduced important regulatory developments that support the creation and expansion of renewable energy communities and collective self-consumption models throughout Italy.

5.5.5.3 Goals & intended Outcomes of HE

The primary objective of CERS is to produce and use clean (solar) energy through the panels installed on the roof of the headquarters of the Family of Mary Association in the San Giovanni a Teduccio neighbourhood of Naples. The second objective is to connect the families in the neighbourhood who are members of the CERS in a solidarity network of prosumers: the users consume the solar energy and redistribute the unused portion. On this basis, the energy distribution company quantifies and monetises the contribution of the CERS to the national energy demand and pays the corresponding amount to the CERS. The latter, in the person of its president (the same as the Family of Mary Association), communicates the dividends to the members (the families) and makes the transfers to their respective current accounts. A second aim of the CERS is, therefore, to allow prosumer families to save money. A third expected result of the CERS is to promote energy literacy among the families involved and, through public and media resonance, to show citizens that it is possible to collaborate in any area to produce and consume renewable energy and, at the same time, save money. According to the niche that conceived and promoted the initiative, this is the strategic objective of the CERS of East Naples and, in general, of the small-scale energy community experiments created in vulnerable urban areas.

5.5.5.4 A multilevel perspective on the CAI using the MLP visualization

In 2021, the East Naples Energy (and Solidarity) Community (CERS) was established through a partnership between key local stakeholders: Legambiente, Famiglie di Maria Foundation, con il Sud Foundation, and the company 3E. The local community, not particularly sensitive to energy-environmental issues, directly benefits from the social action and day-to-day support provided by the Famiglie di Maria Foundation,

active since the 1800s. The project has two primary objectives: (a) a technical-operational goal aimed at promoting renewable energy production and consumption for a sustainable transition, and (b) a socio-cultural goal, focusing on environmental education and active citizenship.

The MLP visualisation (Figure 5.5.4) represents a window of opportunity from 2020 to 2024, coinciding with the Italian translations of European Union directives on energy communities. Global imperatives related to the ecological crisis and energy transition, combined with the crisis of the COVID-19 pandemic and Russia's invasion of Ukraine, influenced the green transition and the development of RECs, promoting shared ownership models that enable end consumers to take part in energy production, raise their awareness about environmental sustainability and strengthen the trust fabric among members of a community.

The regulatory developments at the global, European, and Italian levels have been key elements to facilitate the formalisation of REC. At the global level, milestones such as the 1992 UN Earth Summit, the 1997 Kyoto Protocol, the 2015 Paris Agreement (COP21), and Agenda 2030 have shaped international guidelines. At the European level, important legislative steps include the 2018/1999/EU regulation on Energy Union governance, the 2019 Green Deal, and the 2019/944/EU regulation on the internal electricity market, which emphasised the role of citizens as active consumers. Italian regulations, such as the Milleproroghe Decree (2019) and the CER Decree (2024), have also played key roles in the development of energy communities. Locally, the regime includes entities such as the Municipality of Naples and the Campania region.

The creation of the CER(S) can be considered a socio-technical innovation within the dominant fossil-fuel-based energy regime. However, Legambiente has been identified as the niche actor considering its pivotal role in the elaboration of the idea, engaging local partners, and perceiving the energy transition as an opportunity for political and social empowerment.

By broadening the research field, other key stakeholders of the district, such as the San Giovanni a Teduccio Civic Committee, the former Taverna del Ferro Committee, and the Libera/Maestri di Strada association, manifest a direct conflict with the Famiglia di Maria Foundation, which holds leadership in the CERS. These subjects do not recognise the social innovation brought by the energy community in the neighbourhood and view the initiative led by the Famiglie di Maria Foundation unfavorably, considering its close ties with local and national politicians and the involvement of a few families in the project. In particular, the collaboration between the president of the Foundation and the oil giant Q8 generated mistrust and scepticism.

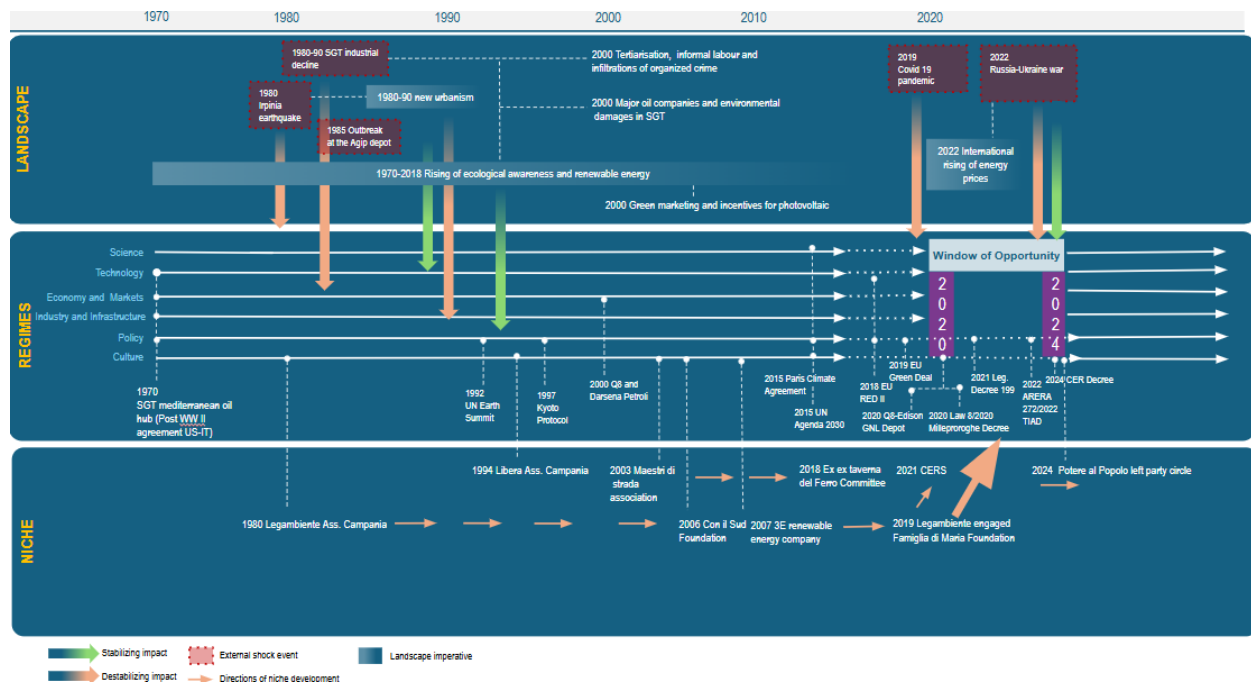


Figure 5.5.4: Multilevel perspective (MLP) visualisation of the historical example

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6. HISTORIC EXAMPLES OF CIVIC ENGAGEMENT

6.1 Covid-19: Network of “Makers” (ES)

6.1.1 Interviews

6.1.1.1 Documentation of application of the method

Four relevant people have been interviewed between October 2024 and February 2025 as follows:

Table 6.1.1: List of interviews and interviewees

Code	Country	City	Date	Duration	Format	Investigated CAI	Function of interviewee in the CAI
CM01	Spain	Madrid	16/10/2024	1h	Online	Covid-Makers in Madrid	Engineer and open-code designer, collaborator of Covid-Makers in Madrid. Involved in designs, 3D printing and production of masks
CM02	Spain	Barcelona	20/10/2024	1h	Online	Business sector	Expert on Health, Safety and Emergency, from Business sector. Involved in designs and coordination task
CM03	Spain	Barcelona	10/01/2025	1h30	In-person	Fab-Lab in Barcelona	Representative of a Fab Lab in Barcelona, involved in prototyping, design and coordination tasks.
CM04	Spain	Barcelona	28/02/2025	1h30	In-person	Fab Lab in Barcelona	Participant. Spokesperson of a Fab Lab in Barcelona. Volunteer involved in logistics tasks.

Interviewees have been chosen to gather insights from within the CAI itself and from relevant stakeholders involved in the production, distribution and coordination task, but also, in the emergency of Covid-Makers.

6.1.1.2 Results

How and why did the initiative come about?

The Covid-Makers emerged as a result of the health crisis triggered by the pandemic in 2020 due to the urgent need for protective equipment during the early stages of the Covid-19 pandemic. The critical situation, characterised by a collapsing healthcare system and shortages of medical equipment, spurred community mobilisation through social media. The call on X -formerly called Twitter– published on 12 March 2020 marked the beginning of the movement and sparked significant attention on social media.

The main objective of the Covid-Makers was to fabricate masks and protective materials against Covid-19 to alleviate the shortage of medical products and health supplies in hospitals, nursing homes and social services. After a week, the call on X proposing the maker community to join a Telegram group to work on the design, coordination and distribution of medical supplies mobilised thousands of volunteers. This Telegram group grew up to 17000 participants across Spain, and this digital space created by the promoters of the initiative became a social space to share knowledge and coordinate tasks but also to empower individuals to innovate.

Nevertheless, the interviewees indicate that it was the combination of the call published on X, the engagement on social networks such as Telegram, Slack, and the dedicated networks of open communities within the maker community that ultimately consolidated the Covid-Makers in various cities across the country, bringing together engineers, doctors, designers, and volunteers. Originating from the 2006 Maker Faire in the Bay Area (Dougherty, 2012), the Maker community promotes a 'Do It Yourself' philosophy, fosters a collaborative culture, and reshapes the innovation ecosystem by providing modern fabrication technologies and enhancing digital skills (Dufva, 2017; Giusti et al., 2020; Unterfrauner et al., 2020). This community is mainly made up of professionals in the fields of engineering, robotics, design and digital fabrication. Around the movement, there is a collective identity centred on the appropriation and politicisation of technologies and the redistribution of the commons as a response to austerity (Calvo, D., Barbas, Á., & Haro-Barba, C. 2022). These innovation communities exchange problems and solutions for collective outcomes (Lakhani, 2016; Morreale et al., 2017), while at the same time, market failures drive users to innovate and address everyday needs, leading to broader social impact (Fauchart & Foray, 2016; Dougherty, 2012; Unterfrauner et al., 2020). In Spain, the Maker Community originated in 2007 with the emergence and consolidation of Fab Labs -Digital Fabrication Labs-. These Fab Labs are spaces equipped with various computer-controlled tools, 3D printers, laser cutters and advanced technologies that enable individuals to create, prototype and turn digital designs into physical objects. The concept came from the Massachusetts Institute of Technology (MIT) as a part of an education outreach initiative to democratise access to the tools for personal invention and technological innovation. In Barcelona, many of these Fab-Labs operate in the facilities of the old factories that were deployed throughout the city in the 19th century. In this respect, the interviewee CM03 pointed out:

"The key to the current economic model was these factories that were created two centuries ago and marked what is known as the Industrial Revolution. Today, we are experiencing a new process of societal transformation: the Technological Revolution. From our perspective, this revolution must go beyond the passive use of technology but rather go through understanding and comprehension of where the things we consume come from and how the technology that today seems to define our lives is produced. The Covid-Makers was a tangible example of how we can make social use of technology and how collaborative work can promote the social and economic development of our society, which is more attuned to today's environmental and social challenges. But from here, from these spaces, we have been trying for a long time to ensure democratising access to knowledge and fostering alternative ways of creating and working."

Interviewees CM01 and CM02 point out that, prior to the Covid-Makers, there was already an open Telegram network with a channel in Madrid. Yet, as a result of the pandemic and the impact of the call on social media, these networks grew exponentially:

“The network became enormous; initially, there were cross conversations, tutorials on ‘how to print masks,’ as well as collaboration links and management by city, neighborhood, and district. To manage such a channel, a communication network link was created, where between 30 and 50 people were usually present in total. This made the task easier. In Covid-Makers Madrid, for example, there was a pinned message that connected you with the different neighborhoods. In that pin, there were instructions on how you could contribute, in addition to a link to github.com so you could learn how to use the 3D printer, as well as instructions for manufacturing the mask or the mask fastening clips for medical personnel.”

In any case, participation in the movement required the acquisition of a 3D printer and, although there was already a shortage of resources in the healthcare sector, the problems with material distribution had not yet substantially worsened. The availability of 3D printers on the market facilitated, in many cases, the acquisition and participation of volunteers who, from their homes, printed face shields. Furthermore, interviewee CM04 states:

“The global crisis unleashed by COVID-19, the news of border closures, the crisis in hospitals, the dramatic images on the news of all the bodies of people passing away... It was a shock to which we had to respond by contributing, and I believe there was no better way than by coming together, uniting, and finding a way to help.”

The initial objective was to provide support to alleviate the shortage of medical products, and for that, they sought individuals who had a 3D printer or access to one. In the case of interviewee CM01, the printer was acquired specifically to join the initiative. For interviewees CM03 and CM04, it was their connection with the Fab Labs in Barcelona that facilitated their participation because Fab-Labs were a key space for the coordination of the work of the Covid-Makers in Barcelona. Before the pandemic, the Fab-Labs in Barcelona functioned as a space for learning and transmission of knowledge linked to technology and the development of innovation projects. During the pandemic, and as a result of the organisation of the Covid-Makers, the city's Fab-Labs became spaces for the prototyping, design and printing of visors, protective screens and other medical materials. But they also became spaces for debate from which the strategies to be followed by the Covid-Makers were discussed, the designs that were prioritised; as well as functioning as meeting, coordination and logistical distribution centres for materials. In synthesis, this Fab-Labs emerged before pandemic but consolidated after the Covid-Maker's experience, functioned as social spaces to support the development of innovations, the consolidation of a collective identity and to build-up a social network among individuals.

Relation to the issue of sustainability and climate change

From the perspective of interviewees CM03 and CM04, the pandemic revealed the shortcomings of the system: the environmental problems and the economic crises of recent decades that have led to reduced public spending and increased inequalities. From the perspective of both, these economic and environmental crises are the result of the same problem:

CM03: “Since the end of the 20th century, transnational commodity production has only increased the consumption of fossil fuels, separating consumption activities from production processes, increasing environmental crises. A system inherited from the production model we inherited from the factory period in the 19th century, which I believe is reaching its peak”.

CM04: “Our production model has become a problem for everyone: for our cities, which are increasingly becoming producers of technological waste, for people because it is a model that feeds inequality, and for the environment because our entire subsistence depends on what is produced far beyond our borders”.

From this critique of the capitalist production model, the interviewees most closely linked to the Fab Labs in Barcelona and with a long history in the makers' movement, argue that a model based on local production and the recycling of materials should be adopted. To this end, they point out, free access to knowledge and to educational programmes that seek another form of learning is essential:

CM04: “learning focused on promoting creativity. Here, for example, we have educational programmes that contribute to breaking the gender gap in access to science; but above all, we are interested in people learning not only how to use a mobile phone, but also how it is made, because that gives you another perspective on things and the use we make of them”.

The idea of the ‘citizen as the real centre of knowledge, the starting point and the end of a chain in which all sectors of society are integrated’ is therefore vindicated. It is therefore a question of producing locally and sharing technology to promote the development of new solutions at any time and in any place”.

In Barcelona, Fab-Labs play a significant role in local and global maker communities. It serves as a research and education center dedicated to rethinking the way we live, work, and play in cities and operates at the intersection of technology and design, driving education and research in digital fabrication. Beyond education, Fab-Labs engages in projects that empower creative communities and support sustainable development. For instance, it plays a key role in the Food Tech 3.0 Lab, focusing on agricultural technologies appropriate for urban food production within circular economy strategies.

6.1.2 Textual Analysis

6.1.2.1 Documentation of application of the method

The text corpus presented below focuses on how the COVID-Maker movement in Spain was portrayed by the media. The results presented in the following section are derived from a systematic review and analysis of 15 documents and informative articles published in various national and regional media outlets, as well as audiovisual material, including podcasts and videos, produced by members of the initiative. The selection of these documents was based on the following criteria:

1) 4 Key Documents, informative articles and reports produced by members of the initiative and stakeholders linked to it. These documents function as a tool for disseminating and promoting activities and public presentation of the Covid-Makers' objectives, shared values and developed strategies. The analysed documents synthesise how, through the synergies created with Fab Labs, research centres and citizens, the Covid-Makers coordinated themselves to carry out the tasks of design, production and distribution of medical supplies.

2) 8 Press articles published in national and regional media, with different types of audience and coverage focused on explaining how the initiative arose, how it was articulated, who were its main promoters and how they were organized at the operational level. We have also included articles presenting interviews with the promoters of the initiative, as well as reports on the involvement and collaboration with the Covid-Makers by institutions and associations in the country.

3) 3 Chapters of the Podcast "La Hora Maker" ("The Maker Time"), a media created by one of the promoters of the initiative and coordinator of the movement. "La Hora Maker" encompasses a catalogue of over one hundred podcasts, addressing a diverse array of subjects relevant to the Makers' community. For analysis, a total of twenty episodes were selected, with a particular focus on the following: the origins of the Covid-Makers, coordination strategies, and the dissemination of activities organised by the collective to encourage citizen participation. Additionally, episodes were chosen that highlighted the role played by multiple social actors involved in the production of masks, visors, and respirators to address the health crisis.

All the documents analysed were published from 2020 to the beginning of 2021, a period in which the Covid-Makers emerged - as a result of the health crisis derived from the pandemic - and remained active either through the production of medical materials or the dissemination of their activities in the public sphere. The publications of the year 2021 had in common the emphasis on synthesising how the movement had developed and the organisation's impact in terms of production and support to medical centres.

In order to facilitate the analysis of the texts, a preliminary categorisation of the 'macro themes' addressed in the documents was first conducted. Secondly, we identified the voices or perspectives from which the issue addressed emerges, how it is defined and described, and how it is positioned about the different aspects dealt with. This approach enables us to examine the manner in which the narrative is constructed around the actions of the actors involved, including the Covid-Makers. Additionally, it unveils power dynamics based on the observation of who is excluded and depersonalised — as opposed to who is made visible and personified — in the definition of the media narrative.

6.1.2.2 Results

What are the main conclusions you can draw from the textual corpus (hence, beyond the individual texts) in terms of the meta-data?

Most of the articles about COVID-Makers were produced from May 2020 to September 2021, when they emerged and became active. All the articles reviewed explained that COVID-Makers emerged as a result of a call organised and disseminated by X on March 12, 2020, which brought together more than 10,000 people nationwide. The main objective of the CAI was visible in public discourse, emphasizing the collective strategies to tackle the critical shortages in medical supplies in hospitals due to the pandemic.

The social impact of the call in social media led to extensive coverage of the news by national media outlets. Both public media, such as *RTVE*, and private media, such as *La Vanguardia*, gave the story nationwide attention with headlines emphasising the collective's altruism and management skills. Spanish media extensively covered the Covid-Makers initiative, frequently depicting the movement's IT professionals as central figures for their rapid mobilization and response during the health crisis.

"Heroes" and "innovative" became the most frequent adjective used to describe the profile and actions of the Maker community, especially those considered the "visible faces" of the movement. In summary, these were IT professionals working in research centres focused on technological development and innovation. The most prominently featured figures in the media were: the director of the INNOVA research centre, who launched the proposal via the X platform, and a science communicator and director of an independent media outlet—the podcast "La Hora Maker". The media published several interviews describing them as central coordinators and spokespersons of the movement.

Nevertheless, not much is known about other key figures of the movement or about the collaboration between public institutions and private companies that joined the COVID-Makers. In interviews published in media, the promoters of the initiative underscore the movement's horizontal structure, highlighting the collaboration and participation of more researchers, as well as the Fab Labs—specifically, the Ateneus network in Barcelona—in coordinating manufacturing and ensuring the availability of material, human, and financial resources (Setuain, 2021; Empodera.org, 2021).

In short, there is one clearly represented sector in the media that helps shape public opinion: IT professionals, who, before the health crisis, already played a central role in consolidating the Makers movement in Spain. By contrast, other social groups and key stakeholders within the movement are portrayed in a more obscure way. A plausible explanation for this phenomenon might be the fact that professionals from the IT sector, along with robotics and industrial design engineers, gathered around the Covid-Makers. Another explanation could be linked to the social media impact generated by the call initiated by its promoter, as well as the outreach work publicising the movement's activities and the visibility gained through the communication platform called La Hora Maker. Additionally, the connection some of its promoters had with technology innovation centres financed by public institutions may also have played a role.

An example of a lack of representation of other actors involved in the initiative is the case of taxi drivers. Few publications covered their collaboration in distributing masks and medical supplies. Only one newspaper dedicated an article to them: *20Minutes Journal*, a free newspaper launched in Spain in 2000 and widely distributed in urban areas, recognised by its brief articles and broad coverage of current events, culture, and entertainment. In any case, the article dedicated to Madrid taxi drivers called them "heroes behind the wheel" and emphasised how this group had to develop its own individual strategies—without support or direct coordination from the central administration—to address issues such as medical supply distribution, organising taxi service during a total lockdown, and self-managing economic resources to prevent the economic crisis from deepening within their community (Toro, 2020).

In Barcelona, the headline of the "*20 Minutes Journal*" focused on a specific collective: taxi drivers of Pakistani origin (Calderón, 2020). Unlike their Madrid counterparts, they were not described as "heroes behind the wheel," though the article did include an interview with one community member. In this interview, the taxi driver underscores their capacity for self-management in areas such as protection against COVID-19, delivering food to the most disadvantaged families, and launching a free transportation service for healthcare professionals.

What are the main conclusions you can draw from the textual corpus (hence, beyond the individual texts) in terms of manifest content?

The actions of the covid-makers played a central role in making technological innovation and its social impact visible in the context of national restrictions and the inability to guarantee the provision of medical supplies due to the closure of international borders.

One of the main conclusions that can be drawn from the textual corpus is that public opinion has been reinforced with the image of Makers as a community focused on technological innovation in the service of society. National Media like *RTVE* and *La Vanguardia* provided extensive coverage of the evolution of the pandemic in Spain. It underscored the importance of grassroots initiatives, portraying citizen-led technological initiatives as "*anonymous heroes*" and "*makers of hope*". Along with other collectives—such

as the healthcare sector—the Covid-makers are portrayed as “*heroes*” and “*superheroes*” serving the common good: confronting the healthcare crisis caused by Covid-19.

Also, main Spanish outlets highlighted the role of the Covid-Makers as innovative to the urgent shortage of medical supplies and personal protective devices. “*Rapid and effective volunteers*” was one of the main ways to emphasize their capacity to mobilize individuals nationwide. National media frequently employed adjectives such as “solidarity”, “altruism”, “committed” and “innovative”. Reports depicted community-driven efforts as “examples of active citizenship” and “technological solidarity”. This media representation led to the organisation of sponsored and publicly funded exhibitions. These exhibitions aimed to present to the public the work produced and the results obtained by the Covid-makers during the health crisis.

What are the main conclusions you can draw from the textual corpus (hence, beyond the individual texts) in terms of latent content?

Covid-Makers is an initiative that lasted one year, from march 2020 to april 2021. They were more active during the shortage of medical supplies, at the beginning of the pandemic crisis, from March to July 2020. During this initial period, the media presence of Covid-Makers and their portrayal in public opinion sparked greater interest in the activities of professionals connected to the IT sector.

The main frames identified over the full period are:

- **Makers identity:** Characterized by being proactive, innovative and decentralised. Their identity is directly connected with their capacities to provide solutions to health problems in a collective way; but also, for resilience and inventiveness during the local management of a pandemic.
- **Tech Solidarity:** Highlights the role of the maker community promoting inclusive learning, democratizing access to knowledge. Also, highlight the importance of innovation activities and exemplifies how society can sometimes be one step ahead of administrations and legislation
- **Technological sovereignty:** Open-source designs as a crucial strategy to fast prototyping and mass production of medical supplies in a more sustainable way (local production). Shared repositories and collaborative platforms to improve designs and promote exchanging. Given the context of the pandemic—and the possibility of similar situations arising in the future—it is explicitly proposed that designs with open licenses be made available to address such scenarios effectively.
- **Civic Engagement through social media:** Association of digital connections with civic participation and tech solidarity. Highlights the role of internet and digital societies in the co-creation of new cooperation models for social change and the role of maker community through the efforts and work of anonymous and motivated citizens disseminated around the country.

In the Spanish mainstream media, specifically *El País*, *El Periódico* and *RTVE*, there was a notable presence of two promoters of the initiative, as well as volunteers directly involved. The media outlets presented a number of news items concerning the processes employed by the Makers (for example, 3D printing), the materials required, and the sheer volume of requests received.

At the beginning of the initiative, the role of the Covid-Makers in addressing critical shortages, particularly of face shields, masks, and other personnel protective equipment (PPE), was frequently lauded as heroic. Newspapers highlighted their rapid coordination through online platforms (e.g. Telegram groups) and emphasised the solidarity and volunteer spirit they demonstrated during a time of crisis. A significant proportion of media reports highlighted the manner in which engineers, designers, and hobbyists who

volunteered their services participated in the movement by sharing 3D printer files, materials, and expertise. This collective endeavour was predominantly depicted in a favourable light.

However, with the subsequent resolution of the global economic crisis and the amelioration of the issue of medical material shortages, there was a precipitous decline in the number of articles focusing on CMs. In some cases, reports have highlighted the necessity for official health certifications, which have the potential to create tension between initiatives such as Covid-Makers and regulatory bodies. Concerns have been raised by certain journalists and public officials regarding the safety and consistent quality of homemade PPE. When such concerns were raised by journalists or public officials in their reporting, the tone adopted could appear to be somewhat critical or sceptical of the efforts of these individual creators.

Finally, after overcoming the most critical moments of the pandemic and with the return to normality, key actors from the Covid-Makers and makers community ended up partnering with corporations like Google. In other instances, the usage rights to the design codes developed by the makers were acquired by Microsoft and Google. Institutionally, the Barcelona government increased its budget for Fab Labs in Barcelona to foster the growth of these centres and encourage greater public participation.

Methodological reflections

One of the main methodological challenges was systematising the large number of scattered online publications about the Covid-Makers. Most of these focused on disseminating activities led by members of the initiative itself, such as invitations to participate in seminars, talks, online conferences, and the sharing of personal innovation projects. This type of information consistently originated from the sources created by the key promoters of the initiative.

Conversely, information regarding the mission, values, objectives, and challenges faced by the CAI was relatively scarce, except for blog posts written by some makers linked to Fab Labs—and also to the CAI—as well as La Hora Maker podcast. These platforms more frequently addressed topics such as the movement's values, its internal narrative, and the social significance attributed to it from within.

From a media perspective, national and regional news outlets provided extensive coverage of the movement, but primarily focused on introducing key figures and highlighting the impact of the CAI's actions. However, there were very few publications that delved deeper into the role of other groups involved, such as medical professionals and taxi drivers.

Finally, the heterogeneous nature of the Covid-Makers, their anonymity, their decentralised presence on social media, and their disbandment as a group following the end of the pandemic crisis in 2021 made it difficult to conduct interviews with CAI members. These factors resulted in the absence of journalistic articles after 2021, a decline in CAI-related publications after 2022, and the inability to secure interviews with the movement's key promoters. These challenges underscore the importance of documentary analysis while also highlighting the crucial role of institutions such as Ateneos and Fab Labs in facilitating and organising interviews.

6.1.3 Social Network Analysis

6.1.3.1 Documentation of application of the method

Social Network Analysis was developed on the foundation of the initial research phase, which provided essential contextualization of the historical example (HE) within the Multi-Level Perspective (MLP) framework. During that phase, a diverse array of methods and data sources was employed to capture an

initial depiction of the scale, dynamics, and interrelationships among the various components constituting the niche in which this historical case transpired. The findings are compiled in the "Context and Stakeholders Analysis for Historic Examples of Political Participation" report (Deliverable 1.2).

Building on this preliminary phase, the initial findings have been increased through the incorporation of two additional methods: the Semi-structured Interviews with key representatives of the HE (as delineated in section 6.1.1) and the Textual Analysis (outlined in section 6.1.2). This subsequent phase has been instrumental in elucidating the nature, intensity, impacts, and underlying interests characterizing the relationships among different stakeholders, as well as in identifying new actors and providing a more detailed account of their interactions.

The Social Network Analysis is visually represented in a dedicated diagram for the Covid-Makers HE, accompanied by an Excel file detailing the breakdown of the various stakeholders' relationships.

6.1.3.2 Results

During the early stages of the COVID-19 pandemic, a grassroots movement emerged in Spain under the umbrella of "Coronavirus Makers" (often called "**Covid-Makers**"). This initiative brought together a wide range of volunteers—3D-printing enthusiasts, engineers, individuals from Fab Labs and maker spaces, university researchers, healthcare personnel, and private organizations—to collaboratively design and produce protective equipment and other medical supplies (such as visors, masks, and respirator components) when these items were in short supply.

The most **powerful and influential actors** within the network are:

1) The Promoters of the CAI, related to technological research, innovation centers at national level, well-known in the technology and maker ecosystem at Regime Level in Spain for developing innovative projects and outreach activities. At the individual level, the power of the promoters of the initiative is reflected in their ability to influence research centres affiliated to the Industrial and Innovation departments of local governments. This is the case, for example, of one of them who, at the time of the pandemic, headed **the Technological Institute of Aragon INNOVA**, one of the main public innovation and technology centers in Spain. The Technological Institute of Aragon **INNOVA** is part of the Regime Level and focuses on strengthening competitiveness of companies through the generation, adaptation and diffusion of innovative technologies, working closely with a wide range of stakeholders, including administrations, universities and business sectors. **INNOVA** emerged as a key actor among the **Covid-Makers** after posting on X the idea of creating a working team to address the shortage of healthcare supplies in the country's hospitals. The impact of their announcement led to the involvement of over 10,000 volunteers from across the country to produce medical resources.

Another key actor due to their influence is: 2) **La Hora Maker**: a Spanish-language podcast focused on promoting and defending the maker movement; translating complex tech concepts into accessible language for diverse audiences; spreading scientific and technological knowledge engaging to the general public. It's also part of the Regime Level. 3) **Maker community**: a global network formed by IT professionals, engaged in DIY (*Do it yourself*) innovation that operates through local digital fabrication labs or online platforms.

Some of the most influential actors at the Niche Level are the **Ateneus Network Fab Lab** and Digital Fabrication Laboratories (**Fab Labs**). Both are public-access innovation spaces that serve as hubs for digital creation and technological education. Promoted by city council in Barcelona, they are equipped with digital

fabrication tools -such as 3D printers, laser cutters-. Already created before the emergence of the CAI, these spaces enable individuals and communities to design, prototype and fabricate. Additionally, these spaces offer training, workshops and collaborative projects, promoting digital literacy. The **Ateneus Network** of Digital Fabrication is located across different districts of Barcelona fostering local innovation ecosystems and acted as a key actor to promote community-driven innovation.

Finally, the most powerful actors at Regime Level were: **Barcelona city council** and **The Spanish Medicine Agency (AEMPS)**. They influenced the CAI because of their role at national level: evaluating, authorising and ensuring the quality, safety, efficacy and accurate information of medicines and medical products distributed across Spain. During the pandemic and related with the CAI, they were in charge of accelerating the homologation process of medical supplies produced by **Covid-Makers**.

Related to **Industries and private companies** that established a direct collaboration with the CAI as a result of the emergency of the initiative, there is the example of **SEAT**, located at Regime Level. To this day, they are one of the most influential industrial actors in Spain within the automotive and manufacturing sectors. Currently part of Volkswagen Group, **SEAT** holds a significant economic, technological and political power in Spain. On the other hand, **Taxis from Barcelona** is an example of a small private company, highly regulated, involved in the initiative, and part of the Niche Level.

Conflict and tensions within the network

The connections between the main actors identified and stakeholders involved were established as follows:

Due to the impact of the proposal shared on social media, the Director of **INNOVA** together with key actors from **Makers Community** formed a partnership based on a supportive relationship to coordinate the activities of the CAI. This is the case of partners from **Arduino** -an open-source electronics platform-, **Cotect Foundation** and the podcast “*La Hora Maker*” (*Maker Time*), which together formed the **Covid-Makers** group. In terms of Niche maturity, all of them played a significant role in guiding the maker communities, establishing connections with healthcare facilities, and sharing designs.

In parallel, the **Technological Institute of Aragon INNOVA**, alongside **Cotec Foundation** and freelance engineers related to the business industry, focused on producing respirators for hospitals in the Aragon region and managing the approval process with the **AEMPS**. Nevertheless, the relationship between **INNOVA**, the **Covid-Makers** and **AEMPS** was a mix of **supportive** and **conflictual** elements stemming from the urgency and unprecedented nature of the situation. While **AEMPS** was generally supportive with innovative solutions, the approval process was rigorous and there were challenges in adapting regulatory frameworks to quickly address the needs created by the pandemic crisis. This led to a conflictive episode: while **Covid-Makers** asked for faster approvals, regulatory bodies needed to ensure safety and compliance, which could be time-consuming. One example is the certification for respirators - one of the main goals for the initiative - which in the end, could not be completed in the final stage.

INNOVA facilitated the dialogue between two parties - the CAI and the institution - and, eventually, some of the products developed by **Covid-Makers** received emergency approval for use in health crises. Institutions supported by **INNOVA** were able to test designs for safety. Once validated, designs were circulated nationally to ensure consistency and compliance with evolving guidelines from **AEMPS**. **INNOVA** became a hub for hundreds of volunteers who assembled face shields, mask components and other items, as well as rapidly prototyping healthcare solutions. In summary, **INNOVA** provided to **Covid-Makers** with

material, socio-organizational and human resources. But also served as a bridge between innovation initiatives and the regulatory framework needed for product approval.

The podcast about the maker movement, *“La Hora Maker”* (*The Maker Time*) plays a key role in understanding the relationship between the media and the **Covid-Makers**. This Spanish podcast has an extensive network of **Fab Labs** and other maker organizations, positioning itself as a key connector during the COVID-19 crisis. Before the pandemic, their primary focus was on providing solutions at grassroots level. During the pandemic -and as a result of the emergency of **Covid-Makers**-, this podcast and its social media platforms provided socio-organizational resources, connecting makers and IT professionals with healthcare workers in Spain. The goal was to develop designs better suited to the needs of healthcare professionals and hospitals across the country. *“La Hora Maker”* provided cultural resources, including tactics to improve designs and technical know-how.

Due to the initiative’s impact and reach, the Director of *“La Hora Maker”* was one of the responsible for creating the platform - a free social space - where innovative solutions were produced. This platform was organized into subgroups and categorized by autonomous communities, to address each region’s specific needs. Its role was to unify various decentralized groups under the **Covid-Makers** umbrella, facilitating the exchange of ideas and open-source designs (for face shields, ventilators parts, etc). In this context, the role of *“La Hora Maker”* can be described as cooperative with a strong relationship with the **Makers community**, **INNOVA** and the networks of **Fab Labs** spreading around the country, especially during the pandemic crisis.

The confluence between IT professionals around the platform created by *“La Hora Maker”*, and the dissemination capabilities of the podcast helped strengthen their credibility, engaging policymakers and making the group more valuable to local governments and the business sector.

One of the main factors that explain the connections between all the professionals involved in the CAI is that they belong to the Maker ecosystem. The **Maker Community** has been established in Spain, tracing its origins to the emergence of the first **Fab Labs** —a global network of local digital fabrication laboratories that share a common inventory to facilitate the replicability of projects. The first Fab Lab In Spain appeared in Barcelona in 2007, and from there, the network spread to the country’s main cities. After their incorporation, other makers spaces in the country and hackerspaces joined the effort, following widely shared open-source files.

The **Fab Labs** in Barcelona are directly connected with *“La Llotja” Higher School of Design and Art* and with the **Ateneus Network Fab Lab** (*Xarxa d’Ateneus de Fabricació Digital*) but they operate in different spheres, creating a complementary environment. While the **Ateneus Network Fab Lab** primarily focuses on providing access to digital fabrication tools, the **Fab Labs** serve as centers for research, education, and collaboration among professionals in architecture, engineering, and product design. In the case of *“La Llotja”* Higher School, they offered specialized expertise in product designs and ergonomics, contributing to refining maker designs. The reciprocal relationship between these organizations allowed volunteers from different backgrounds to coordinate and improve final products.

During the pandemic and as a part of the initiative, Barcelona’s **Ateneus Network Fab Lab** provided manufacturing (physical) materials and human resources to the CAI, bringing together a team of over twenty workers to support people on the front lines in hospitals, care homes, home care services, social service centers, and more. Meanwhile, **Fab Labs** took on the management of creating open-source

production designs; organizing production of materials; collecting items independently produced by citizens connected to the maker community; and coordinating their distribution to hospitals, medical centers, and care homes.

Both types of digital fabrication centers receive financial support from the **Barcelona City Council**, and after the **Covid-Makers** experience, both the **Fab Labs** and the **Ateneus Network Fab Lab** saw an increase in funding from the local government. Furthermore, the **Barcelona City Council** provided public recognition by organizing a series of outreach activities to showcase work carried out by Covid-Makers during the pandemic, through coordinated efforts among the **maker community**, the **Fab Labs**, and Barcelona's network of **Ateneus**. In summary, the relationship between the **Covid-Makers** and **Barcelona City Council** is directed, cooperative and strong.

From the business sector, the company **SEAT** joined the initiative by providing its assembly plants to: 1) manufacture medical supplies, and 2) contribute with financial resources to support research for developing a COVID-19 vaccine. The company's established production lines, logistics networks and technical expertise that were invaluable in scaling up the production of supplies.

Nevertheless, even though the relationship with the CAI was cooperative, the intensity can be defined as weak because it fluctuated over time. With the outbreak of the pandemic, **SEAT** repurposed some of its production facilities to manufacture medical devices, such as protective face masks and parts of ventilators. It collaborated with healthcare institutions, research centres -related with **Makers Community** - and government agencies to produce and distribute these medical supplies. While **Covid-Makers** developed the prototypes, **SEAT** provided their industrial capacity to mass-produce these designs at scale. In some cases, **SEAT** used designs created by **Covid-Makers** or collaborated on the development of specific devices that were too complex for small-scale production. At the same time, **SEAT** leveraged its reputation and influence to negotiate with public institutions for medical approvals and to participate in public-private partnerships aimed at addressing the crisis. Once the health crisis was overcome, the direct relationship between the CAI and Seat dissolved. A similar situation occurred with other companies that, on a one-off basis, organized themselves to coordinate and distribute materials such as **Taxis from Barcelona**.

In the distribution materials, **Taxis de Barcelona** played a central role. They not only delivered the items produced by the **Fab Labs** and the **Ateneus** network but also collaborated with **SEAT** on logistics management. On one hand, they operated a pick-up service for the makers' fabricated goods; on the other, they set up a special, free transport service for healthcare professionals. Private companies like **SEAT** funded part of these mobilization efforts in Barcelona. In this sense, their relationship with the CAI was cooperative but can be described as weak because it dissolved with the end of the pandemic crisis.

Niche maturation and development

Related to Niche maturity, the most powerful and influential actors are IT professionals connected to centres of innovation and research in robotics, engineering and digital designs. They can be defined as makers with a profile highly entrepreneurial with full experience in leading centres of research, legitimised by public and private institutions and with the capacity to mobilise a huge number of makers. All of them are still involved in digital fabrication laboratories -promoted by local local government- allocated around the country. Belonging to social spaces - like **Fab Labs** and innovation centers- allowed them to create

connections but also, to establish collaborative relationships with other actors from business and industry, healthcare professionals and policymakers.

The main Window of Opportunity occurred in 2020, when the accelerated spread of Covid-19 has led to a global shortage in essential services, turning many countries into resource-limited environments. In that context, an unprecedented number of makers, especially from IT activities, have started the coordination of local production of medical supplies to meet the urgent demand for protective equipment. Prior to pandemic, research on 3D printing, the proliferation of digital fabrication tools and digital fabrication laboratories (**Fab Labs**) and makerspaces -virtual espaces to share digital knowledge and foster innovation projects- were key elements to understand the emergency of **Covid-Makers** and their social impact. During 2020, the achievements in technological terms but also, these free social spaces allow makers to move from individual to collective actions, addressing the efforts to provide support to local communities. According to interviews and textual analysis, the massive and fast response, the rapid coordination and the impact of **Covid-makers** solutions increase the interest and public support from public centers and local governments. In this sense, the relationship between CM and institutions was cooperative, especially after 2020, with the recognition of the value of decentralized innovation, providing funding and incentives to individuals related with **Maker Community**, **Fab Labs** and small companies working on health-related innovations.

6.1.4 System Mapping

6.1.4.1 Documentation of application of the method

Similar to the Social Network Analysis (SNA), the System Mapping builds upon the foundational work carried out during the initial research phase, which provided context for placing the HE within the Multi-Level Perspective (MLP) theoretical framework. In addition, the early research findings have further refined and expanded both the Semi-structured Interviews (detailed in section 6.1.1) and the textual Analysis (described in section 6.1.2).

The interviews have been central for the System Mapping, offering a deeper look into how the main niche and regime factors have developed over time. They have also yielded crucial insights into the cause-and-effect relationships among several key factors.

This work has resulted in a narrative description of the principal elements discussed below, accompanied by Causal Loop Diagrams that provide a visual representation of these factors.

6.1.4.2 Results

PATTERNS OF KEY FACTORS AT REGIME LEVEL

- **Pattern 1: Social Environment and Innovation communities: the emergency of Fab Labs in Barcelona**

How digital technologies facilitated community engagement to promote innovation?

Over the past two decades, advancements in internet communication and digital technologies have facilitated *crowd-based problem-solving*, democratizing innovation through active community engagement and consumer contributions. In this sense, the Makers movement is a prominent example, with a “*Do It Yourself*” ethos. It fosters a collaborative culture that reshapes the innovation ecosystem by providing access to modern fabrication tools and enhancing digital competencies.

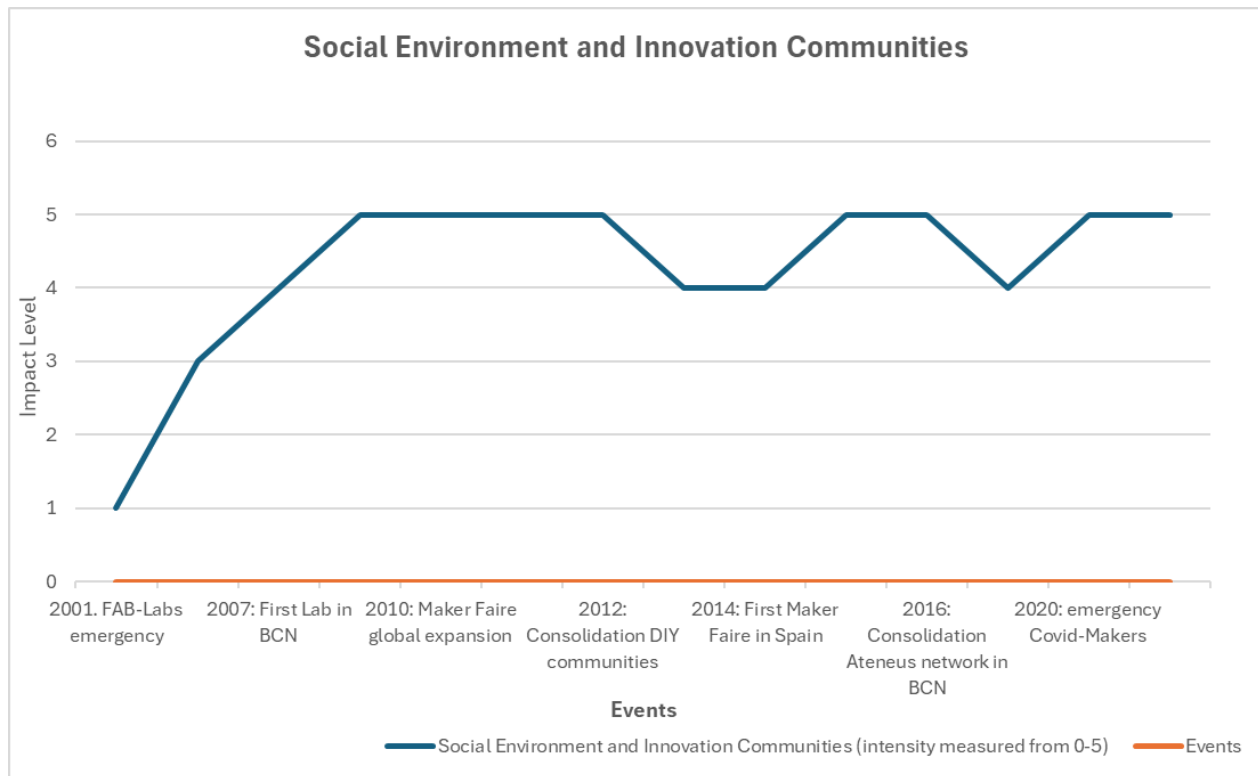


Figure 6.1.1: FAB-Labs, social environment, innovation communities and impact (Source: García 2016)

The origins of the Maker Movement date back to 2001, when Professor Neil Gershenfeld from the Massachusetts Institute of Technology (MIT) launched the course *"How to Make Almost Anything."* This course invited students from all disciplines to create their projects by combining various digital fabrication and electronics techniques. The high demand from students enrolled in these courses led to the creation of the first Fab Lab at MIT: a space equipped with common tools for manufacturing using 3D printers. Eighteen months later, the model developed by MIT had expanded beyond the institution itself, reaching 350 Labs in more than 40 countries around the globe (García, 2016).

Today, **Fab Labs**—or FABulous LABoratories, as described by one of the leading figures of the Maker Movement in Spain— form a global network of local laboratories that facilitate invention through digital fabrication. They share a constantly evolving same inventory, a variety of machines and processes and are connected through the internet and videoconferencing, forming one of the largest maker communities in the world (García, 2016).

In Spain -and indeed in the EU- the first FabLab was established in Barcelona, in 2007 at the Institute for Advanced Architecture of Catalonia (IAAC). The initiative marked the beginning of a nationwide expansion of digital fabrication laboratories. Located in a former factory, it has transformed into a hub of innovation and education and quickly became a leader in maker culture and digital fabrication, contributing significantly to the global network of Fab Labs.

One of the organization's fundamental principles is that while the designs created in these laboratories can be protected and sold in any manner chosen by the inventor, they must also be made available for others to use and learn.

In 2018 the Government of Aragon created the Open Lab of Aragon (LAAAB) to promote transparency, citizen participation and open innovation in regional governance. This Lab connects different actors from: public administration, civil society, private sector entities and individuals with the main goal to create policies, services and projects to improve democratic governance.

Around this LAAAB emerged Frena la Curva (Flattering the Curve): one of the most relevant initiatives to complement public services with civic society solutions. In June 2020, 68 entities in Spain joined this initiative that was replicated in 22 countries in Latin America.

Pattern 2: Financial crisis, austerity measures

The year 2008 was marked by an economic crisis triggered by the collapse of the housing bubble, which severely affected the construction sector. As the financial crisis deepened, the government responded by implementing austerity measures, including significant cuts in public spending, particularly in health and education, and bank bailouts. Consequently, the national economy contracted sharply, unemployment rates reached over 27% in 2012 —particularly among younger generations—and social inequality increased significantly (Royo, 2015).

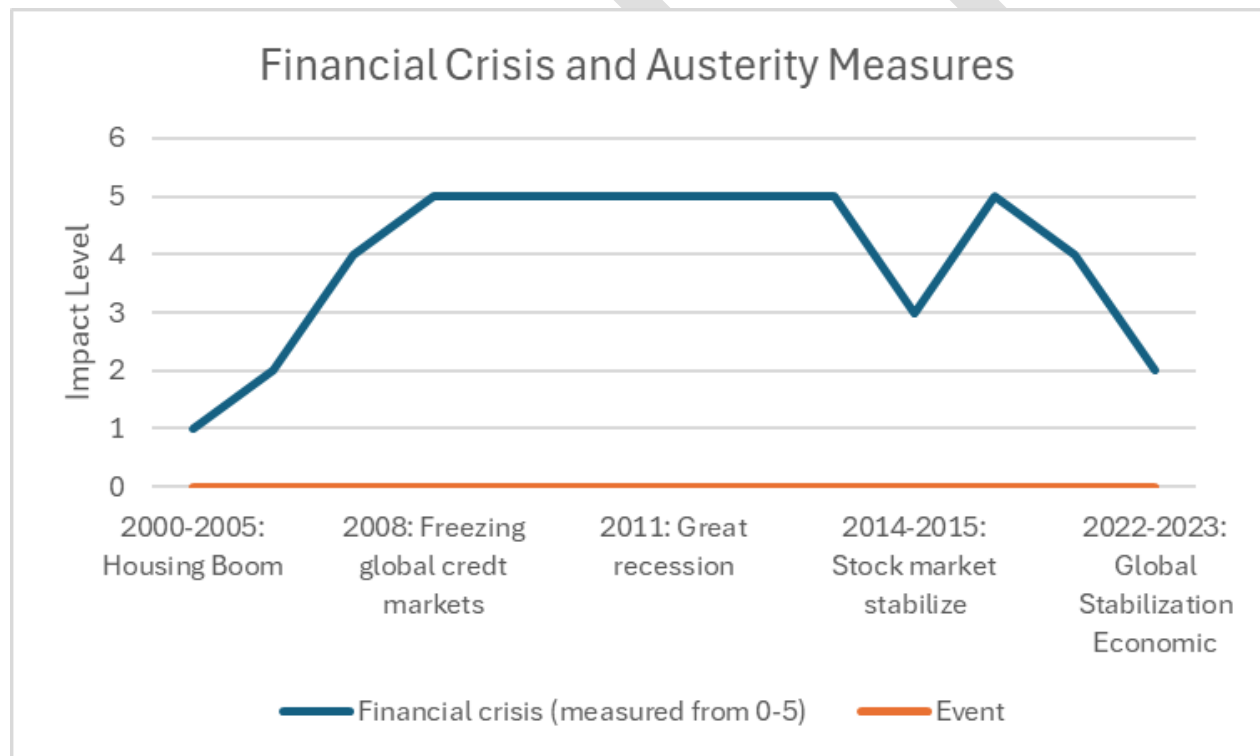


Figure 6.1.2: Impact level of events before, during and after the 2008 economic crisis (Source: Royo 2015)

Pattern 3: Social discontent, Ecological crisis, globalization and the emergency of Fab cities as a concept

The financial crisis translated into widespread social discontent, which exploded into the “15-M Indignados” movement in May 2011. Heterogeneous sectors of Spanish society occupied the central squares of cities like Madrid and Barcelona, demanding inclusive policies to guarantee the right to quality public healthcare and education and the need for laws ensuring access to decent employment and

housing. State bailouts of the banking sector generated social unrest, resulting in a public call for the banking system and stock market to be held accountable for the 2008 financial crisis.

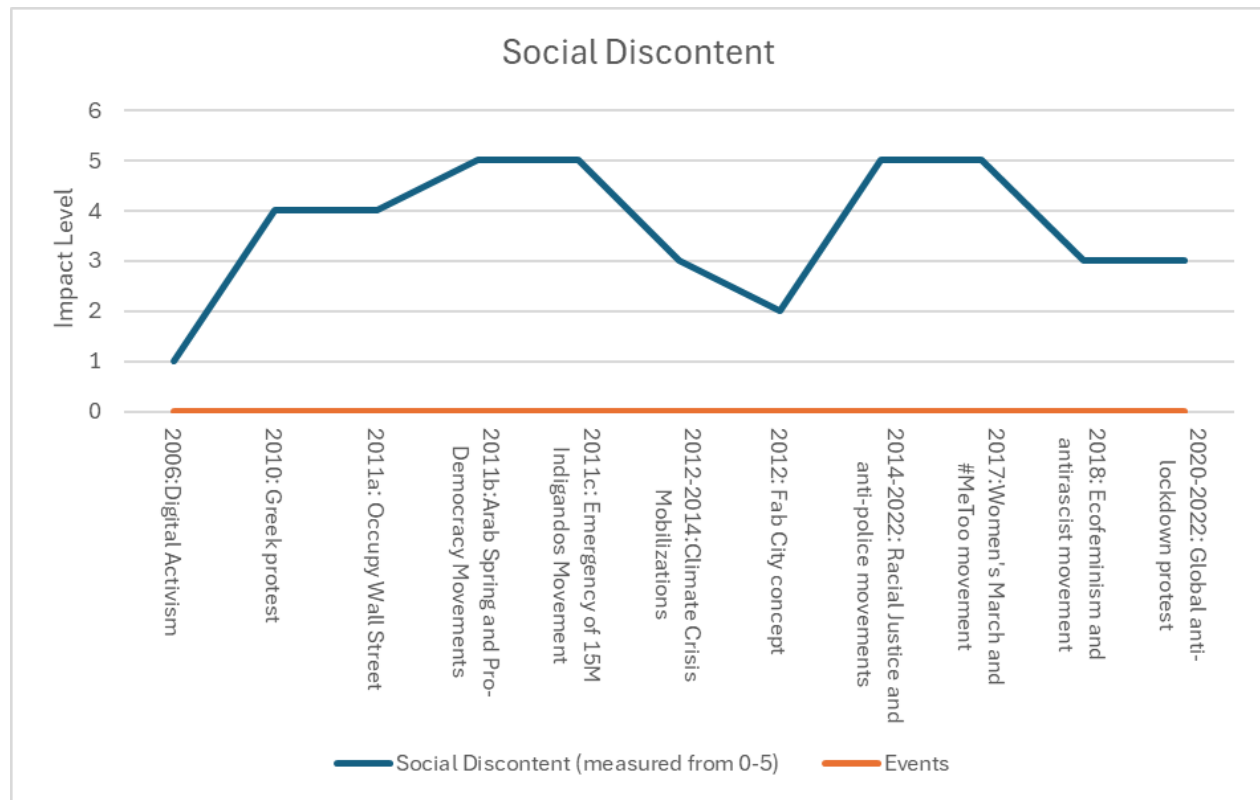


Figure 6.1.3: Impact level of key events on social discontent between 2006-2022

At the same time, the recurring environmental and economic crises over the past twenty years have led to continuous criticism of the production model established more than a century ago and the standardized global economic system. From the perspective of the director of one of the Fab Labs in Barcelona, cities have become large "waste factories, and their subsistence depends on technology produced far from them."

From this critique of the production model emerges the slogan *From PITO to DIDO*, advocating for adopting a new model based on local production, material recycling, and meeting local needs through local invention. This is the underlying idea of the *Fab City* concept: the development of a productive city made up of citizens who share knowledge to solve local problems and generate new business models and educational programs. It thus emphasizes the "*citizen as the true center of knowledge, the starting and ending point of a chain that integrates researchers, universities, industry, commerce, administrations, and more*" (Tomas Diez, 2017). The goal is to *produce locally and share technology* to foster the development of new solutions anytime and anywhere.

Pattern 4: Political crisis: the irruption of outsiders and the control of narratives

As a result of the economic crisis and the social discontent, the main political parties that had historically governed the country—PP and PSOE—faced harsh criticism and were accused of leaving the national economy in the hands of the global financial market, thereby failing to represent or advocate for the population's needs.

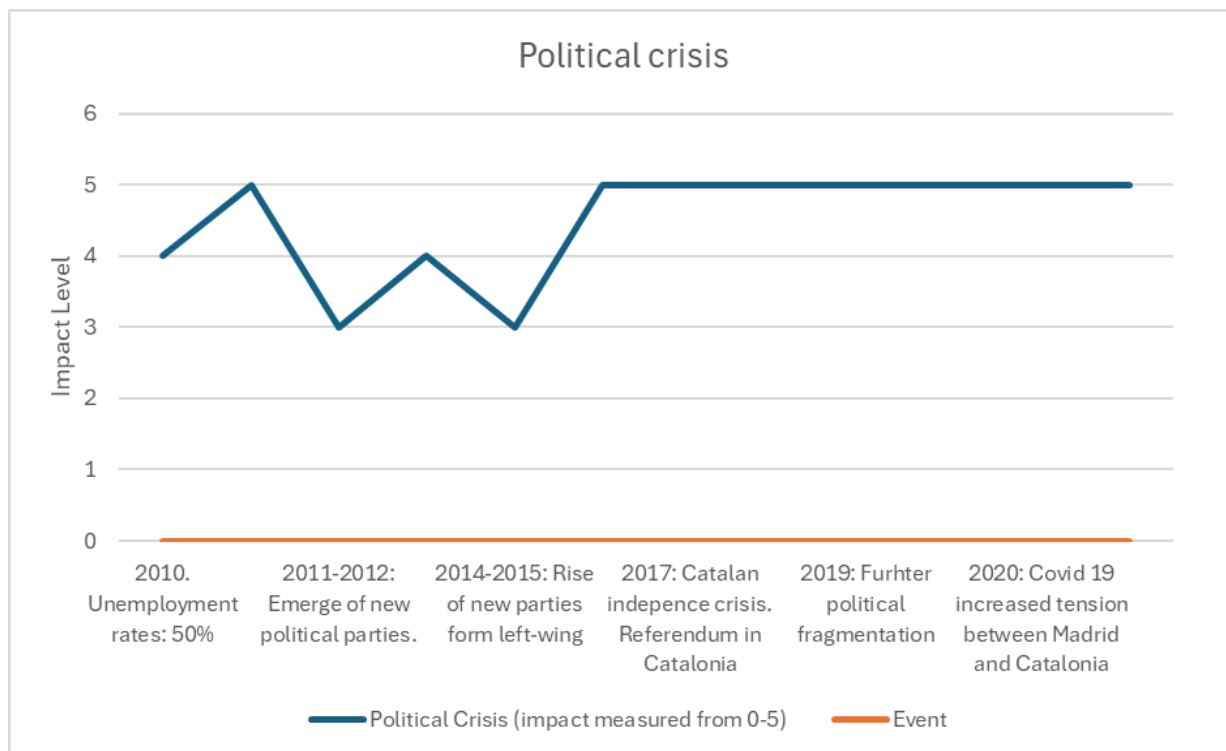


Figure 6.1.4: Impact level of key events on the political crisis between 2010-2020

The crisis of political trust is still remaining and led to the rise of new political actors in the central government in 2019. One example is Podemos, a political party emerging from the social movements forged during the 15-M mobilizations. The arrival of these new actors led to a deep crisis of governability in 2019, with early elections, difficulties in reaching political agreements to facilitate parliamentary decision-making, and constant disputes over control of the political narrative.

This internal crisis became even more evident during the pandemic management: the difficulty in establishing agreements between the central government and the autonomous governments resulted in ongoing debates about the purchase of medical supplies, the management of hospitals, and the enforcement of national mobility restrictions.

Pattern 5: COVID-19 crisis and Government public measures during pandemics and engagement strategies.

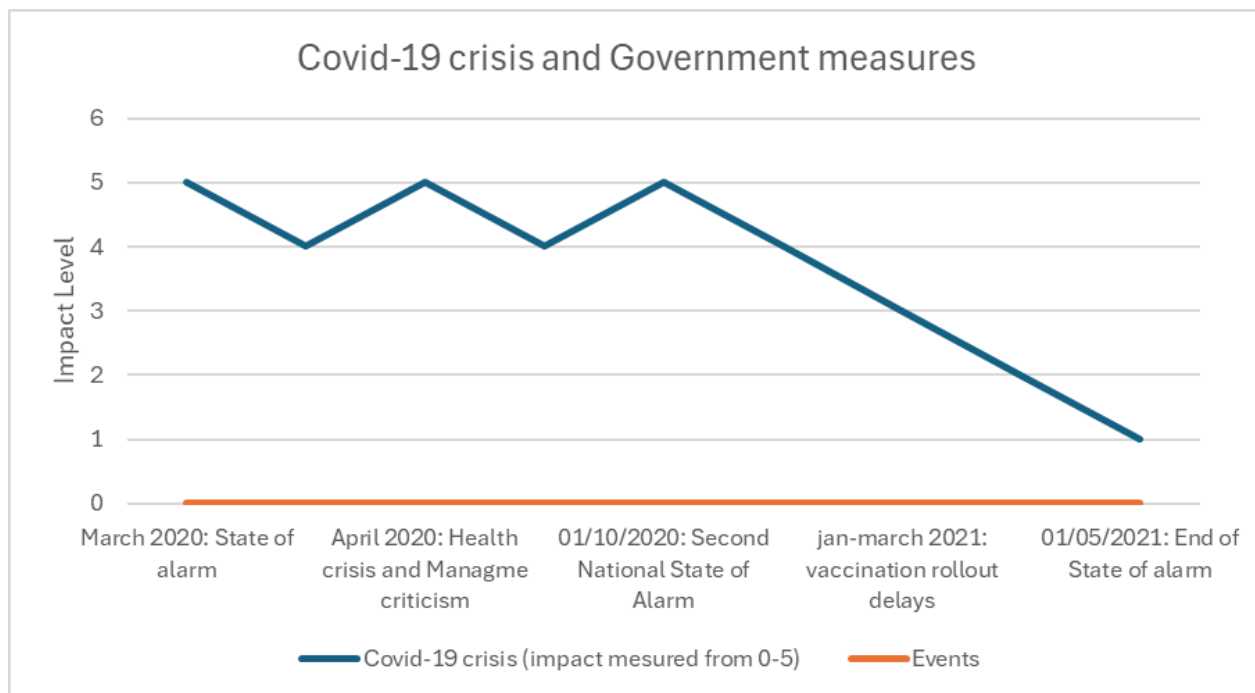


Figure 6.1.5: COVID-19 crisis and Government measures – impact of key events

During the pandemic, the Spanish Agency for Medicine and Health Products (AEMPS) sped up the approval of equipment so hospitals could get what they needed fast and safely.

Because of the pandemic crisis, the Spanish government put new rules in place and handed out big financial packages to push digital transformation, boost industrial innovation, and improve healthcare infrastructure through the INVEAT plan, approved in April 2021.

As a strategy to promote proactive responses among citizens, the Spanish Government and the Health authorities relied on social media (mostly Twitter, now X) to spread information, encouraging the public to share vital messages and foster cooperation through the hashtag #EsteVirusLoParamosUnidos (#UnitedWeStopThisVirus). This hashtag was featured during official press conferences, the Prime Minister's public messages, and other cabinet leaders' appearances. Initially created as an institutional social media campaign, it aimed to raise COVID-19 awareness and to strengthen citizen engagement during the most challenging phase of the lockdown. But it was also crucial to provide public information to citizens about the actions of the central government and public administrations, the health crisis and the involvement of citizens through social media. This hashtag reached a total of more than 1.2 million users and more than 2 million retweets, showing how citizens became involved in the constant and massive dissemination of tweets by Spanish authorities.

NICHE LEVEL

ARCHETYPES DISCUSSION

INITIATIVE GOAL

COVID-Maker's emerged two days after the State of Alarm on March 12, 2020, enacted by the central Government. The initiative began with a Twitter post by the Director of Technological Institute of Aragón

INNOVA proposing: 1) create maker respirators to alleviate the shortage of protective materials against COVID-19 in hospitals, nursing homes, and social services; and (2) invite the maker community to join a Telegram group to work on the design, coordination, and distribution of medical supplies. Their goal was to face the critical situation characterized by a collapsing healthcare system and shortages of medical equipment, spurred community mobilization.

The decentralized collective work and the anti-commercial logic tackled the immediate shortage of medical materials and structural deficits in health services. This network embraced Spanish legacy for social mobilization, as during the 15M, yet it presents actions that are circumscribed to the pandemic context and deserve further attention.

The **Covid-Makers** movement in Barcelona achieved significant results through rapid, decentralized collaboration. Their main outcomes include the development and share of **open-source designs** for personal protective equipment (PPE) and medical devices. This strategy enabled makers worldwide to replicate and improve their solutions.

Archetype 1: Limits to Growth

COVID-Maker's initiative was very fast growing. Inspired by the Italian Maker community, a small group of Spanish makers quickly organized, creating a Telegram group (@CM) to coordinate efforts at the national level. In less than two weeks, the movement grew to 17,000 participants (Arroyo et al., 2021), mobilizing thousands of volunteers across Spain.

A driving force was the urgent need for protective equipment and medical supplies and the availability of volunteers with 3D printing and technical skills and strong public support.

In less than 24 hours, this Telegram group connected more than 17,000 volunteers, including engineers and doctors, developers, researchers, but also citizens interested in the initiative. And as more volunteers joined the initiative and produced useful supplies, more visibility they got and more participants they attracted. This created a positive feedback loop, accelerating the growth and output of the initiative.

Emergence of Limits

As the Covid-Makers expanded, initial difficulties arose in **coordinating** their work due to the group's large size, which included people from all over the country. As a **strategy**, the organizers created multiple links to manage the production and distribution of medical equipment, classifying tasks by city, neighbourhood, type of cooperation (individual vs. institutional), and area of contribution (manufacturing, design, or distribution).

The limit: Volunteer Fatigue and sense of loose

Once the shortage of medical supplies was resolved by the central government, the demand for the Covid-Makers' products diminished. Also, sustaining the energy and motivation of thousands of unpaid volunteers -that act as workers- became harder as the pandemic stretched over months. These factors, combined with the group's ideological and social diversity, the absolute anonymity of the participants and the lack of spaces to foster a shared sense of community, led to an internal crisis. There was no consensus on how to continue the initiative, what its future objectives should be, or the direction it should take.

Nevertheless, despite these limitations, various projects emerged to keep the initiative *"alive"*. One of these was the Covid-Makers Foundation and the creation of a forum that brought together the leading

open-source developers and scientific communicators within the maker community. Many of them work on creating open-source code for companies such as Google or Microsoft. They have also promoted initiatives like scholarships that allow companies to invest in high skill professionals who generate and make open-source code available to the public, thereby facilitating technological innovation.

Archetype 2: Shifting the Burden

Problem Symptom

As a result of the pandemic, the Spanish healthcare system faced a severe shortage of personal protective equipment (PPE) and other supplies (masks, face shields, respirators, ventilators, etc.). The closure of international borders—and consequently the inability to purchase these materials from the global market, particularly China—made the situation worse.

Symptomatic Solution

In this context, COVID-makers offered a rapid response by organizing the decentralized production of medical supplies using 3D printing. However, the certification process prevented them from obtaining the necessary approvals to use these devices in hospitals and medical centers. The challenges involved in **certifying** the produced equipment led to changes in the manufacturing strategy. Initially, the makers focused on developing respirators to hospitals, but when certifications could not be obtained in time, they shifted toward producing masks, face shields, accessories, other PPEs and ventilators. However, forming strategic alliances with public institutions and innovation centers proved key to accelerating the certification process for certain medical supplies.

Over time, as COVID-maker production ramped up, the perceived shortage diminished, creating a temporary sense of equilibrium.

The lack of structural changes in medical supplies production

This perception of equilibrium lowered the urgency to invest in deeper, structural solutions—for example, improving coordination among Spain's autonomous communities and seeking new agreements with local suppliers to support a more sustainable production model that complies with state regulations.

Indeed, once the global circulation of goods began to normalize, not only did COVID-maker production lose relevance, but the existing status quo in terms of production, procurement, and certification of medical supplies via international markets returned.

The lack of consensus and protocols

The Covid makers created multiple designs for face shields, respirators, and other medical supplies. The first challenge they had to face was reaching an agreement on which designs would be the most effective for use in hospitals. However, given the size of the group and the egos involved—according to what they expressed in the interview—it was impossible to reach a consensus. Therefore, each community, each subgroup, ended up working on the design they considered best. This enabled progress in producing medical supplies, but soon it led to problems with official approval. Lacking material testing and a clear understanding of healthcare staff's needs, many of these face shields and medical materials proved ineffective, and the administration ultimately did not approve their use.

In one of the Fab Labs, they explained that they never really knew for certain whether the face shields they created were actually used. They also told me that another problem was the absence of people who understood “user experience” better—meaning individuals with closer ties to the business and design world. In short, the designs were developed without taking into account the real-world application of the products.

Causal Loops

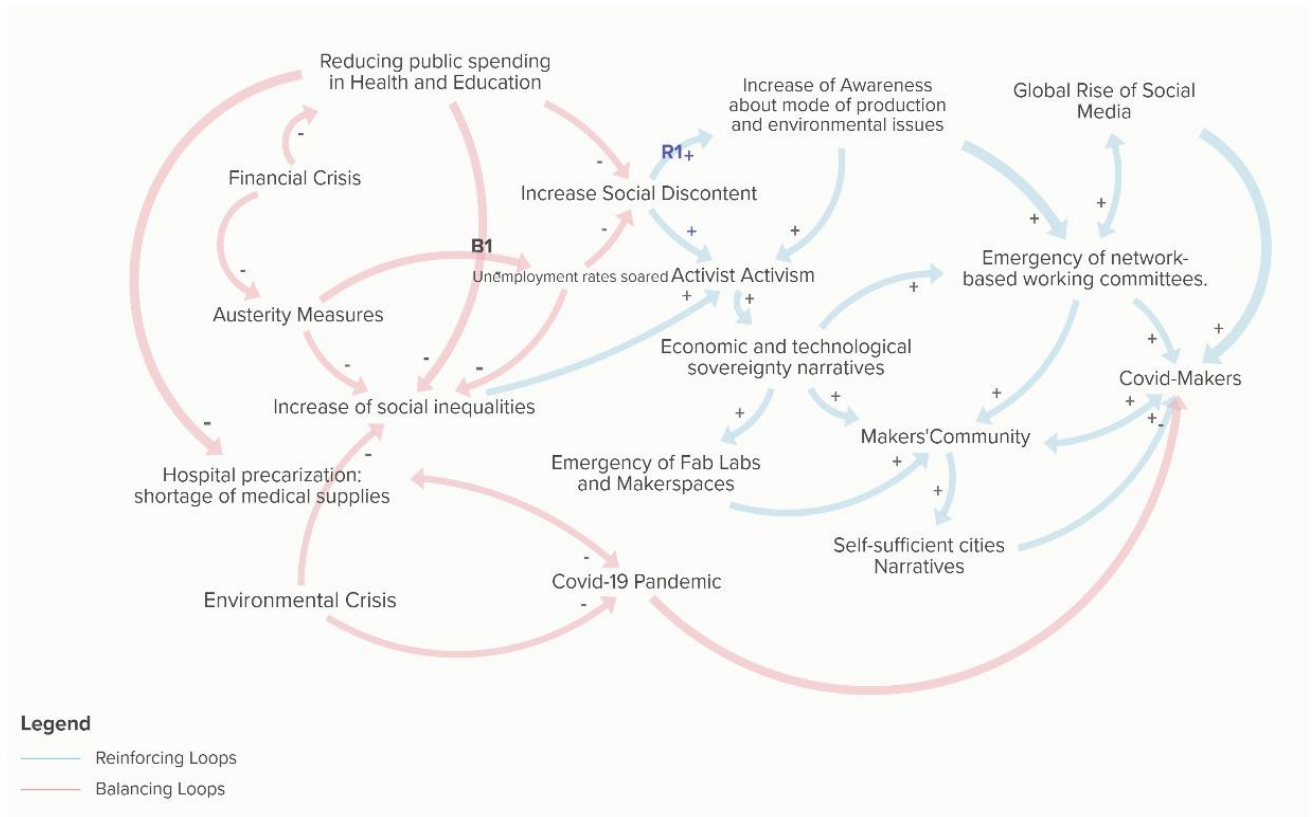


Figure 6.1.6: CLD at niche level

Created through Kumu. [Kumhttps://kumu.io/Privera/casual-loops-covid-makersu](https://kumu.io/Privera/casual-loops-covid-makersu)

-B1

The global financial crisis of 2008-2014 led to the implementation in Spain of the bank bailouts and austerity measures, reducing public spending in health and education. As a consequence, the national economy contracted, the unemployment rates soared, especially among younger generations, and social inequality increased significantly. These economic policies were perceived by society as ineffective and unfair, leading to the widespread social discontent which exploded into the “15-M Indignados” movement in May 2011.

The government’s response focused on implementing liberal policies in the hiring system and on reducing taxes for large companies as a strategy to revitalize the labor market. The adoption of these policies—together with the recurring media coverage of corruption cases within government institutions—led to widespread discontent and a loss of trust in traditional political parties. In 2019, this loss of credibility resulted in new political actors, emerging from the 15-M social movements, but also new regime actors

from the far-right parties, coming to power. The outcome of this emergence was a governance crisis that reached its peak in 2020 with the pandemic. During this period, the difficulties establishing agreements between the central government -result of a coalition among heterogeneous parliamentary partners like new political actors from social movements and regime actors- and the autonomous governments resulted in ongoing debates about the purchase of medical supplies, the management of hospitals, and the enforcement of national mobility restrictions.

This is a **balancing loop**: austerity bred discontent which led to political crisis and lack of trust in traditional government parties, making it harder to establish political consensus and increasing polarization into society.

R1

The global rise of social media became a central element of communication and organization for the social movements that emerged during the first decade of the 2000s. The 15-M movement was structured around a hashtag related to the so-called “Arab Spring,” and the coordination of thousands of people internationally was made possible through the creation of network-based working committees. At the same time, social media became the main mechanism for communication, dissemination, and promotion of political activism around environmental issues, as well as a platform to criticize the current production system—viewed as the principal cause of the ecological crisis and widespread inequality. However, social media also became a tool to challenge traditional mechanisms of information access and the governance system.

From this critique of the production model emerge new concepts like those related to Makers communities: the underlying idea of a productive city made up by their citizens who share knowledge to solve local problems and generate new business models and educational programs to produce locally and share technology to foster the development of new solutions anytime and anywhere.

This is a **reinforcing loop**: institutional victories of social movements improved protections, but unresolved structural inequalities (especially those related to housing and sustainable projects) perpetuate cycles of unrest and mobilization.

6.1.5 Summary and Conclusion

6.1.5.1 *Origin & Evolution of HE*

The Covid-Makers initiative arose in response to the public health emergency provoked by the Covid-19 pandemic and the stringent lockdown measures introduced by the Spanish government in March 2020. Nonetheless, its conceptual roots can be traced to the early 2000s with the rise of Fab Labs and the establishment of “maker spaces” across Spain—dedicated environments fostering technological innovation and educational activities focused on the development of open-source prototypes.

These spaces laid the groundwork for the emergence of the Spanish Maker community, organised around the principles of the Do-It-Yourself (DIY) ethos. This philosophy promotes experiential learning, experimentation, and the unrestricted circulation of knowledge. Initially conceived as creative environments that encouraged individuals to devise personal solutions using accessible resources—primarily 3D printers—these spaces evolved into large-scale production facilities during the pandemic.

In Barcelona, Maker spaces gained increased significance due to material and financial support from the municipal administration. This backing led to the consolidation of the Ateneus de Fabricació Digital

network, comprising numerous innovation hubs, digital fabrication laboratories, and IT specialists. These infrastructures played a pivotal role in enabling the Covid-Makers' formation, catalysed by a public appeal in March 2020 from a leading digital innovation centre director. The initiative ultimately mobilised over 17,000 individuals nationwide.

The group remained operational until mid-2021. However, following the subsidence of the pandemic and emerging internal organisational challenges, the initiative gradually dissolved. Many participants, nonetheless, continue to engage with the broader Maker ecosystem and contribute to the ongoing development of Fab Labs.

6.1.5.2 *Organization & Activities of HE*

The pandemic precipitated a critical shortage of personal protective equipment (PPE) and various medical devices—including masks, visors, respirators, and ventilators—across the Spanish healthcare system. Compounding this issue was the closure of international borders, which significantly constrained access to global supply chains, particularly those dependent on Chinese exports.

In response, the Covid-Makers rapidly mobilised to coordinate a decentralised production effort using 3D printing technologies. While the original objective involved manufacturing respirators, regulatory barriers impeded the timely certification of these devices for hospital use. Consequently, the initiative reoriented its focus towards the production of masks, face shields, and other PPE.

The Covid-Makers adopted a decentralised and collaborative organisational model, establishing various working groups commissions with specific mandates. Volunteers contributed based on their expertise, resources, and social networks. These groups' commissions were tasked with: (1) design of medical equipment, (2) fabrication using 3D printing, (3) logistics and distribution according to local needs, and (4) collection and coordination of individual contributions from citizens with home-based 3D printers.

The synergy between the Maker community and digital fabrication centres proved indispensable in satisfying the urgent demand for protective equipment, particularly in urban centres such as Barcelona.

6.1.5.3 *Goals & intended Outcomes of HE*

Between late March and June 2020, the Ateneus Digital Fabrication Network in Barcelona provided the Covid-Makers with approximately thirty 3D printers and coordinated personnel—both professionals and volunteers. During this period, more than 30,000 units of protective gear were produced within these centres. Additionally, contributions from individual citizens, municipal staff, taxi drivers, and social-health professionals played vital roles in the design, production, and distribution processes.

At the international level, the impact of Covid-Makers can be seen in the provision of funds by international NGOs such as the Ashoka Foundation, which launched a social innovation fund in response to the virus. Large companies and corporations such as Google, HP, SEAT, and international organisations like the Ashoka Foundation contributed with financial resources to facilitate the purchase of materials for digital fabrication laboratories and to help sustain the maker movement. SEAT joined the initiative by making its local infrastructure available to makers for the production of ventilators while also donating over two million euros for medical research and the development of a Covid-19 vaccine.

As output increased, the perceived scarcity of equipment diminished, thereby reducing systemic pressure to implement structural, long-term solutions. For example, the anticipated development of coordinated procurement strategies and partnerships with local suppliers—aimed at creating a sustainable and

regulatory-compliant production framework—did not fully materialise. Once international trade resumed, the pre-existing centralised supply mechanisms were reinstated.

6.1.5.4 A multilevel perspective on the CAI using the MLP visualization

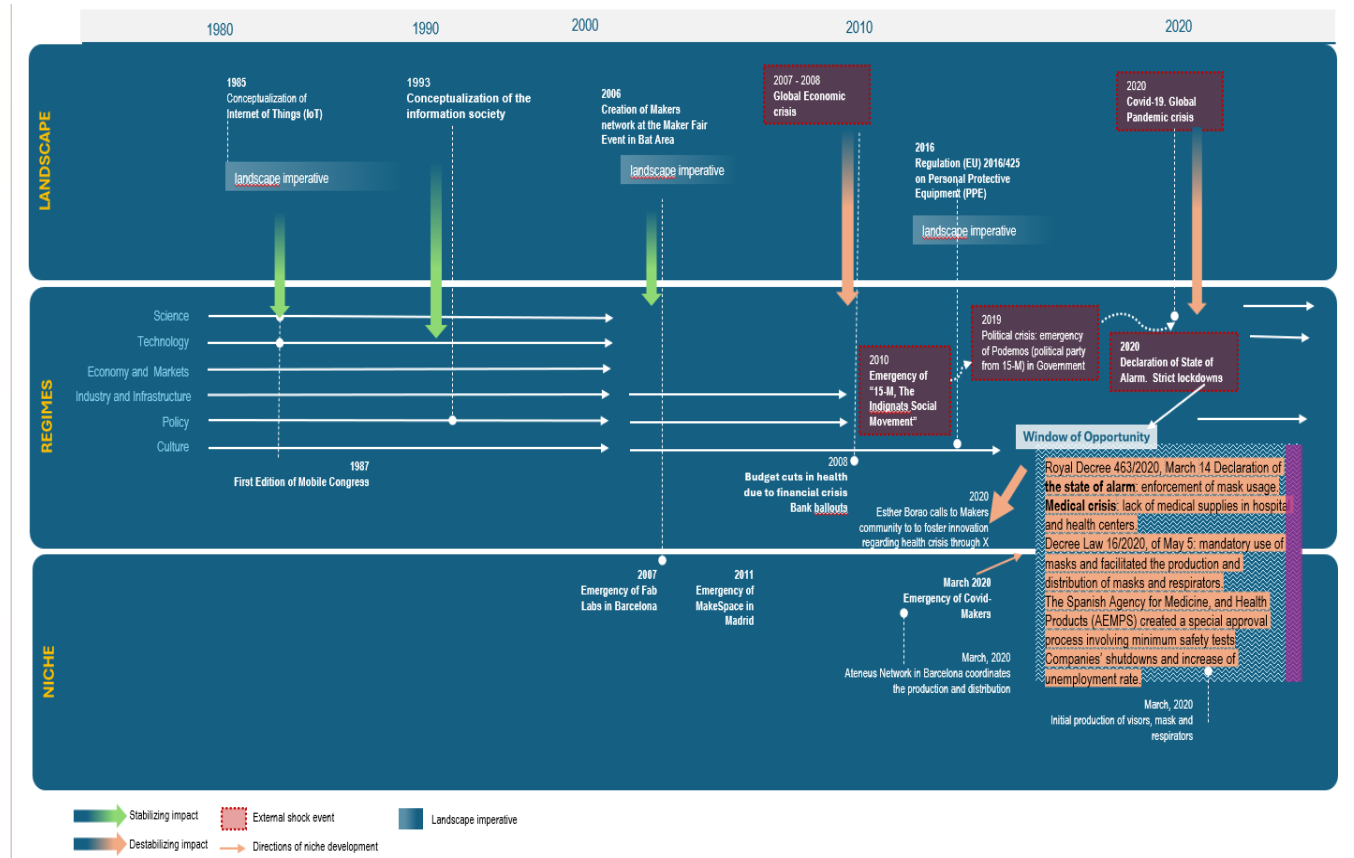


Figure 6.1.7: Multilevel perspective on the CAI using the MLP visualization

What kind of transition has occurred from a multi-level perspective?

The Covid-Makers represent a "bottom-up" and temporally bounded niche innovation, triggered by the exogenous shock of the Covid-19 crisis, which disrupted conventional supply chains for medical equipment. This disruption created a critical window of opportunity for grassroots technological interventions. The Covid-Makers emerged as a niche innovation, capitalizing on decentralised methods such as 3D printing to meet urgent demands for personal protective equipment (PPE).

At the **landscape level**, key influences included the development of the Internet of Things (IoT), the rise of the information society, the propagation of the DIY philosophy, European PPE regulatory frameworks, and the socio-political ramifications of the pandemic.

The DIY ethos underpinning the Maker Movement traces back to 2001, when Professor Neil Gershenfeld introduced the "How to Make Almost Anything" course at MIT. The course's popularity led to the establishment of the first Fab Lab at MIT, and within 18 months, the model had proliferated with nearly 350 Labs in more than 40 countries around the globe. Today, Fab Labs constitute a vast international network of locally managed digital manufacturing spaces, fostering innovation through accessible technology, creating one of the largest maker communities in the world.

The 2020 pandemic acted as a major exogenous disruption to global production systems. In Spain, political responses such as border closures and lockdowns coincided with funding schemes aimed at accelerating innovation, thereby legitimising the emergence of decentralised initiatives such as the Covid-Makers.

At the regime level, the first Spanish Fab Lab—established in Barcelona in 2007 at the Institute for Advanced Architecture of Catalonia (IAAC)—served as a catalyst for a national digital fabrication infrastructure. Building on this foundation, the Barcelona City Council launched the Xarxa d'Ateneus de Fabricació, a public initiative designed to democratise access to digital fabrication tools and training. Located in a former factory, it has transformed into a hub of innovation and education and quickly became a leader in maker culture and digital fabrication, contributing significantly to the global network of Fab Labs.

Although the Covid-Makers operated outside the conventional healthcare system, their temporary innovations addressed immediate needs. Nevertheless, the reestablishment of traditional supply chains upon the pandemic's decline curtailed the group's momentum, ultimately leading to its dissolution. Yet, the initiative left a significant legacy, sparking ongoing dialogue on integrating community-based fabrication into emergency response systems.

In 2020, the Covid-19 pandemic prompted a robust and centralized government response through the declaration of the state of alarm. This measure in Spain resulted in one of the strictest lockdowns in Europe but also, included funding support to innovation -with the focus on health system-, which facilitated the scaling up of niche innovations like the Covid-Makers network.

At a regime level, while the Covid-Makers provided a vital temporary solution, their innovations operated outside the established healthcare system. Their niche efforts coexisted with the dominant regime—traditional, centralized manufacturing and supply chains—that eventually reasserted itself once international trade resumed and regulatory barriers were re-established.

Once the crisis abated and borders reopened, the traditional supply system resumed its role, leading to the dissolution of the Covid-Makers as an organized group. However, their efforts left a legacy in demonstrating the potential of **decentralized, community-driven production** and opened up discussions on integrating digital fabrication in emergency contexts.

How has this transition occurred?

Social, Economical and Health Crisis

The roots of this transition lie in the intersection of overlapping crises. The financial downturn of 2008, accompanied by austerity policies and banking bailouts, led to reduced investment in public health and education, fuelling widespread socio-economic inequality and unrest. These conditions culminated in mass demonstrations such as the 15-M Indignados movement of 2011, which demanded a more equitable and accountable governance model. During this period, heterogeneous sectors of Spanish society occupied the central squares of cities like Madrid and Barcelona, demanding inclusive policies to guarantee the right to quality public healthcare and education, as well as the need for laws ensuring access to decent employment and housing. In addition, the main political parties in the country were accused of leaving the national economy in hands of the global financial market thereby failing to represent or advocate for the population's needs.

Simultaneously, ecological degradation and globalised production have drawn criticism for perpetuating environmental and social injustices. From the late 20th century onward, the transnationalisation of manufacturing intensified fossil fuel dependency and disconnected consumption from local production systems.

Social innovation and Digital transformation

Preceding the pandemic, the capitalist system, and the rise of the Internet of Things (IoT) laid the ground for the so-called information society (Martin, 2017), as one in which the creation, distribution, and manipulation of information is central to economic and cultural activities, driven by the pervasive influence of ICTs. The Covid-19 pandemic, with its far-reaching impact, served as a critical juncture between the MLP levels, acting as a critical landscape pressure. As a catalyst, it disrupted daily life, economic stability, and healthcare systems worldwide, causing major changes across the regime and niche levels.

The Covid-Makers exemplifies the principles of such an information society, as they quickly formed in response to the crisis, using existing and advanced technological skills and a collaborative spirit. Using platforms like Telegram, they efficiently coordinated efforts to share, design, prototype, and produce the essential medical equipment. Through 3D printing and open-source designs they were able to fill critical gaps, demonstrating how niche innovations could transition into mainstream systemic trends, influencing regimes and supporting the central government. Furthermore, the collaborative nature of the CM proves that information societies can foster new forms of social organizations and collective action, enhance community resilience and responsiveness in times of crisis, moved by the willingness to provide mutual support and to foster common good.

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6.2 Local Self-help movement in Kainuu region (FI)

6.2.1 Interviews

6.2.1.1 Documentation of application of the method

Table 6.2.1 List of interviews and details

Interview code	Country	City/Municipality	Date	Duration	Format	Function of the interviewee in the CAI
KH1	FI	Kainuu region	25.9.2024	50 min	Online	Rescue operations
KH2	FI	Kainuu region	27.9.2024	1 h	Online	Municipality official
KH3	FI	Kainuu region	30.9.2024	40 min	Online	Rescue operations
KH4	FI	Kainuu region	2.10.2024	50 min	Online	Representative of power company
KH5	FI	Kainuu region	2.10.2024	1 h 8 min	Online	NGO volunteer

The interviews were conducted during autumn of 2024. The interviewees were identified during the CO-SUSTAIN project's WP1's preliminary phase. The interviewees represent relevant stakeholders who experienced the power cuts in Kainuu during winter 2017-2018 and could describe the role of the self-help movement in their communities.

6.2.1.2 Results

The self-help movement came about during the extensive power cuts in Kainuu and North-Eastern Finland during the turn of the year in 2017-2018 as neighbors mobilized to help each other to survive the power cuts. This was the first time in Finland that power cuts had happened on such a scale during wintertime. What made the situation serious was that since they happened during wintertime, there was a risk that people without heating in their homes would have to be evacuated. Additionally, the area that was most affected was a sparsely populated rural area, which meant that the distances between towns and health care centers are long. Cold climate, rural areas and long distances made the fixing of the cable networks challenging and time-consuming. In addition, the power cuts and snow caused problems regarding the telephone network. This meant that the peoples' calls to the rescue department didn't always go through, and there was a risk that that help couldn't be contacted in time during emergencies. Therefore, the core issues during the power cuts were fixing the infrastructure in a challenging terrain, making sure that people are safe and ensuring that the communications from the officials to the local citizens and media are consistent and unified. One of the interviewed stakeholders described the start of the power cuts in the following way:

“An incident of this scale had not happened before in this country according to my understanding, and there were no ready action plans, so we had to come up with those action plans as we went.” (KH3)

Therefore, the key officials didn’t have ready work plans for power cuts of this scale and for this kind of environment. At the beginning, before the rescue department took charge of the rescue operations and fixing of the grid, efficient communication to the locals was challenging, as different authorities did their own communications:

“So we had to create a system about who informs and what, and that the first challenge was that each municipality and other officials were informing their own” (KH1)

Until then, the different authorities had given their own instructions and statements via media sources and their website for the local people, which led to contradicting instructions and confusion regarding the need to evacuate. Therefore, creating a platform for sharing information among the main stakeholders in the power cuts was essential in order to take efficient action in ending the power cuts and providing unified instructions for the locals:

“Actually the biggest challenges were that, because we of course did not have experience of this kind of situation, in which there were both municipalities and corporations involved, and the cyber security center, and this business, and all the network stakeholders that operated here, so how we managed to form contact with everyone, what was the platform, in which everyone could operate on and how a real time situation picture could be formed about where we are at and to share the information for everyone” (KH1)

After these initial challenges, the representatives of municipalities, healthcare, power companies and the rescue department formed a task force, set up a platform for sharing information efficiently and formed a task force to advance the rescue operations. After the rescue department took over the operations, they also took charge of the communications for all the residents and to the media. The power cuts gained plenty of media publicity. One of the interviewees commented the media attention towards the power cuts in the following way:

“And this was also interesting for the political decision makers. We had visits from presidential candidates and the minister of the interior. They came to get to know the situation, and we gave them a review of the situation there. We were, I guess one could say, at the center of things.” (KH1)

In addition to the rescue department leading the operations, another interviewee discussed their role during the power cuts:

“From the point of view of the municipality, we have plenty of space regarding preparing. We could have instantly placed 200 people in the municipality’s premises. We would have had blankets and mattresses and towels and such. And we had offered the municipality residents the opportunity, because here in town the power cuts were not really distributing everyday life” (KH2)

Therefore, the infrastructure was well prepared to evacuate people in case of a worsening situation. However, the task force deemed that evacuation was not necessary, as people could manage during the power cuts. Additionally, the locals were not keen to leave their homes, preferring to stay and find ways to manage without electricity:

...“In Kainuu there are these kinds of challenging circumstances, so majority of the residents living in the countryside are used to them on some level” (KH4)

The role of the citizens’ resilience during the power cuts came up in the interviews and it was emphasized as an important factor that helped them to survive the power cuts. The interviewed officials discussed how they did not have to evacuate anyone during the power cuts and that the locals had the know-how on how to survive without electricity:

“Most people could more or better adapt to the power cuts, and especially in Kainuu there are these kinds of elderly people, and as many of them commented, that “it’s alright, we’ll use candles and put wood in the fireplace” (KH4)

The houses in the rural areas in Kainuu are often heated by fireplaces and therefore could be heated without electricity. In addition, everyday activities could be carried out during the power cuts due to the lack of absolute dependence on the power grid:

“Some of the houses still have these traditional wood-burning stoves, so it (the power cuts) doesn’t really disturb cooking” (KH2)

What’s more, the fact that Kainuu was among the last regions in Finland to gain electricity was brought up during the interviews:

“The people who remember the time without electricity are not even that old” (KH2).

Most of the interviewed stakeholders highlighted the locals’ resilience during the power cuts as a key factor in managing in challenging conditions. One interviewee, who had gone from door to door in the rural areas of Kainuu during the power cuts, pointed out that there is another side to the resilience of the locals:

“There’s pride in people in rural areas. It can be that people don’t want to show that they need help” (KH5)

Therefore, it could have been that more people would have needed help than what they expressed to the officials. The interviewee considered the option that perhaps it was culturally easier for neighbors to look after each other instead of contacting officials for help. The interviewee continued how most of the residents said that they are managing the situation well, but that especially the elderly had a need to talk and have conversations.

“Most of them said that they are fine. I’m sure that they were, but then they started to say all kinds of things. You had to stay and listen, they started to talk about war times, especially the elderly, and all kinds of stories. An unbelievable need to tell stories” (KH5)

In summary, from the interviewees’ perspective, the main challenges regarding the power cuts were connected to finding ways to have efficient cooperation among officials in order to avoid miscommunication and to fix the damages caused by the crown snow efficiently. Although the task force among the officials was a great way to efficiently improve the situation with the power cuts, civilian help had its role in the whole picture. The interviewees described how there was motivation among the locals to help each other and also the officials in their rescue work and with fixing of the power grid. The local people were also encouraged to go around and check up on their neighbors, especially if they were elderly:

“I remember that the most, that the municipality (officials) went to peoples’ doors and asked around, then the answer from these elderly people was that they don’t want to leave their home, they are fine in the candlelight” (KH4)

“Also the residents, I don’t necessarily know how the power companies helped, but one thing that they did was that they were even encouraged to go and check up on their neighbors if there were elderly people or people who could possibly need help, that they would check up on the situation. That probably happened” (KH4)

In addition to checking up on neighbors, another significant method to help the officials during the power cuts was providing the officials up to date information about the residents and their whereabouts. The locals knew which houses in the rural areas were inhabited and which were not. In addition, the locals provided help in going around the rural areas, and seeing where the trees had fallen on the power grid and reporting the locations to the power companies. As one of the interviewees described: “There were citizens eagerly signing up that they could go around these areas” (KH3). Therefore, there was collaboration between the local residents and the officials, in addition to neighbors helping each other.

Analysis theme 2: Relation to issue of sustainability and climate change

Climate change and sustainability didn’t come up during the interviews as a specific topic. Rather, climate change was indirectly addressed through discussing how the power cuts were caused by the snow and abnormally warm temperature for that time of the year. However, it was mentioned how the warm weather had its advantages, as it meant that people wouldn’t have to be evacuated.

Analysis theme 3: Niche characteristics

Although the existing culture of preparedness and neighbor help was helpful also for the officials and power companies, the self-help movement and volunteering was niche in the sense that it was a spontaneous movement that lacked the access to the task force decision-making and needed the permission from officials to help in various volunteering tasks. In addition, the interviewees discussed how the help from the niche level was sometimes excessive:

“So there was perhaps a challenge that there were people who felt an immense need to do something.

They were in a way frustrated in that they couldn’t take care of and solve the problem.

On the other hand, it’s very important for people that they experience that they can help somehow. But it’s very frustrating for people who are doing fine in those situations, that they can’t do anything. In a way there was a challenge that how to focus all the need to help on the correct things” (KH2)

This clash was visible especially in opinions regarding the need to evacuate:

“But there was already some activity among the municipality residents and the NGOs that they would have evacuated people from rural areas to the municipality center, although no decision of evacuation had been made. So there was a need for calming down, that let’s not go and get people from their homes here to the municipality center. First and foremost, if they don’t want to leave, because no such decision had been made, that people had to leave their homes” (KH2)

Therefore, the role of unified communication from the official level was important in order to prevent misinformation among the citizens. Some of the interviewees also argued that there seemed to be more helpers than was necessary, especially regarding the fixing of the power grid and rescue operations. One of the problems with utilizing volunteer help was the lack of necessary training:

“The thing was that in the Kainuu region there is about 11 000 kilometres of over-head wire, which had then been pressed from the time of the frost by the crown snow, which pressed the power lines downwards to such an extent, so that power cuts were caused. And of course, when this was starting to get fixed, of course working with the power lines demands certain kinds of training and permits. And there were individual persons who volunteered that they could help with the fixing of the power lines, but it is out of question, because of occupational safety rules, regulations and instructions” (KH3)

The interviewee continued to describe the number of personnel already working on the case and stated that “even our own people didn’t have enough to do” (KH3).

Although during the power cuts there were at times miscommunication between the different stakeholders, the role of cooperation between different stakeholders was a key takeaway from the power cuts. The stakeholders included in the rescue operations discussed how the role of NGOs should be encouraged in the future.

6.2.2 Textual Analysis

6.2.2.1 *Documentation of application of the method*

The data collected for the Kainuu case consists mainly of news stories on various media outlets about the turn of events during the Kainuu power cuts, focusing on the stories about how the residents experienced the power cuts and how they survived it. The main events of the power cuts took place between December 29th 2017 and January 8th 2018.

Furthermore, background material to bring context on the main background issues – resilience and preparedness – are discussed in research materials produced by the Finnish National Rescue Association SPEK, who have conducted research for this topic for over a decade. One of the reports of SPEK specifically discusses a survey conducted for the residents of Kainuu about their experiences of the power cuts, which has been very helpful in understanding the context of the events.

In addition, a news article is included in the analysis by the Finnish Red Cross about them helping the locals and some reports are included by the municipality of Hyrynsalmi about their preparedness for similar events.

A main takeaway from the collection phase of the dataset was that previous research on the Kainuu power cuts are surprisingly scarce. In contrast, the news coverage on the turn of events was thorough. Therefore, the main turn of events and the experiences of the locals are interpreted mainly from the news stories and the survey by SPEK.

6.2.2.2 *Results*

Meta-data

The news stories discussed the experiences of the power cuts from the perspectives of the officials and the locals in Kainuu. Many of the news stories include interviews of the officials, who explain the current

situation regarding the power cuts at the time. Most often the interviewed person was the head of the rescue department of Kainuu, municipality officials and representatives from the power companies Kajave and Loiste. According to the interviews conducted during this research phase, the head of the rescue department also became the main person for communications as a special task force was established to improve the efficiency of the rescue operations and the fixing of the damaged power lines. This is noticeable also in the news regarding the events, as the head of the rescue department is interviewed very often in the collected news. The communication style is very clear and emphasises that the situation with the power cuts is under control.

The citizens interviewed in the news stories were locals who had been affected by the power cuts, for example farmers or elderly people. Although helping neighbours was mentioned in the news stories, it wasn't the focus point of any of the news stories or other materials. The news stories emphasised the practical mindset of the locals and how they were managing without electricity. According to all the collected data for the textual analysis, the local residents remained very calm throughout the power cuts and showed resilience during challenging circumstances. The main focus in the news stories therefore is describing the power cuts and not the self-help movement of the locals.

Manifest content

As the main events cover the time period of a week, there isn't an opportunity to analyse changes over a long period of time related to the CAI. However, it was interesting to notice that in general, Kainuu power cuts were not mentioned more extensively in research regarding electricity and power cuts in Finland, as the situation was quite unique.

Latent content

The emphasis of the latent content is on the resilience of the local people in Kainuu during the power cuts. The remoteness of the region is discussed by describing the long distances between houses and villages. The latent content includes descriptions on how the locals are impacted by the power cuts and how they are calmly coming up with practical ways to manage without electricity. In the interviews of the local people there seems to be a comparison between the people living in the cities and the folk living in the Kainuu region. The stories emphasise how the people in Kainuu are used to harsh conditions, whereas the people living in cities in Southern Finland might not manage survival during power cuts in winter as well as the people in Kainuu.

Neighbour help is mentioned in the interviews of locals, for example in the context of utilising the locals' knowledge and know-how and the importance of cooperation. The importance of local know-how was discussed also in the interviews, as the officials interviewed talked about how the local knowledge was vital in working in a remote region.

The more academic papers and reports by SPEK focus on how to improve preparedness as a whole. They discuss how the situation is quite good when compared to international surveys, but especially people living in cities could be better prepared for power cuts or other emergencies.

Methodological reflections

There were plenty of news stories available on the power cuts, which were quite similar in content. This could be due to the rescue department managing the communications of the events after a few days of

the power cuts. It was surprising how little research there seemed to be about the power cuts, or the self-help movement.

Perhaps social media posts by the municipalities or village associations could have provided more insight into the self-help movement, as this text corpus focused more on the events of the power cuts.

6.2.3 Social Network Analysis

6.2.3.1 *Documentation of application of the method*

The social network among the key stakeholders of this historical example was mapped as a part of the work package 1.

6.2.3.2 *Results*

Influence and power in the network

Kajaani rescue department was the most powerful and impactful stakeholder compared to other stakeholders in this historical example. Compared to other stakeholders, they had the highest authority in the power cuts rescue operations and the authority to request help from the army forces. The rescue department was leading the newly established task force during the power cuts and took over the responsibility of communications to the media and the local inhabitants on January 4th, 2018. Therefore, their source of power was from resources, authority from their legislative role, know-how and network.

Other important stakeholders included the electricity companies in the Kainuu area, Kajave and Loiste, although they had less power and impact than the rescue department. The power companies were responsible for fixing the power lines, as they had the resources, such as trained personnel that could fix them. The power companies' effect on the niche was through collaboration: the local residents were able to provide information on where the biggest damages on the power lines were located. Although their relationship to the niche was mainly collaborative, some minor conflicts emerged due to the amount of help offered by locals.

The Finnish Red Cross was the main NGO working in Kainuu during the power cuts. According to the social network analysis, the NGO was moderately affected during this historical example. They had some power and influence, as they had access to resources, such as essentials through their national network and volunteers who went from door to door and asked if the local residents needed any essentials, such as water. However, they lacked the decision-making power regarding the need to evacuate or the overall direction of the rescue and fixing operations. Their relation to the niche was collaborative.

The least affected and affecting category included the municipalities of Suomussalmi and Hyrynsalmi. The municipalities' personnel, especially the municipality leaders and high-ranking officials were significant stakeholders, who communicated instructions by the rescue department to the locals and also provided places to stay and bathe when necessary. In addition, they took part in the task force led by the rescue department. In the beginning of the power cuts, before the rescue department took over, the municipalities communicated their own instructions regarding the power cuts to their residents.

Another regime level stakeholder who was least affected and affecting was the national media outlet Yle. They reported the current events in Kainuu. As the biggest broadcaster in Finland, their news gained a wide audience. Another identified media stakeholder was Kainuun sanomat, a local newspaper. Although they didn't reach as big an audience as Yle, they kept the locals updated on the current events.

The most powerful actors represent the regime level, but the niche, which consisted of the local residents of Kainuu, did have an impact although they lacked access to decision-making power. The regime level stakeholders affected the regime through encouraging them to look after their neighbors and by providing opportunities to help the officials with tasks related to fixing the damages caused by the power cuts.

Most of the relations among the stakeholders were neutral or collaborative. Minor conflicts such as differences in communication between officials, citizen volunteers and NGOs were only discussed during interviews. However, these differences were not visible from the textual analysis. The sources of conflict were access to decision-making power and knowledge. As the rescue department had the decision-making power regarding evacuation, this could have caused frustration among the niche and NGOs, who perhaps viewed the situation to be more serious than the rescue department.

Niche maturation and development

Given the very short timespan of the power cuts, the niche could be estimated as a spontaneous manifestation of the existing culture of preparedness and sense of community. There was encouragement towards the niche from the regime level stakeholders, but some conflicts arose regarding the need to evacuate people. Perhaps if the power cuts would have lasted a longer time, the niche would have developed towards a more mature movement.

6.2.4 System Mapping

6.2.4.1 Documentation of application of the method

In order to analyse this historical example from the perspective of system mapping, data was collected through interviews from key stakeholders and literature analysis was conducted of news stories and previous research on this topic. In addition, the context analysis and stakeholder analysis conducted earlier were useful for system mapping as well. These methods were complimented through forming causal loop diagrams of each historical example. Causal loop diagrams were formed based on the historical example's regime and niche levels. In order to form these diagrams, the historical example and its development was estimated from the perspective of Braun's system archetypes. For the historical example of the Kainuu power cuts, the most descriptive match was the archetype of shifting the burden. This was chosen on the basis of the dynamics of the historical example: self-help was important during power cuts in a challenging rural environment. However, as the official help became more efficient and the power cuts were at their end, the self help among citizens became less important.

For this historical example, however, it was challenging to form graphs describing changes in behavior. To form more accurate graphs to describe behavior, more quantifiable data should have been collected earlier. Therefore, the graphs in this text describe the number of power cuts happening on the national level, and the number of homes without electricity during the power cuts in 2017-2018.

Regime level

Regime level issue that led to niche development(s):

- Infrastructure in rural area was unprepared for the effects of crown snow on power grids, which led to large-scale power cuts

Kainuu is a mainly rural area with vast distances between towns and villages. Power cuts occurred under challenging natural conditions, making it more difficult for officials and power companies to repair the grid. Before the rescue department took over operations a few days into the outage, there was no unified communication from officials. The existing culture of preparedness and neighborly support in rural areas proved vital during the power cuts.

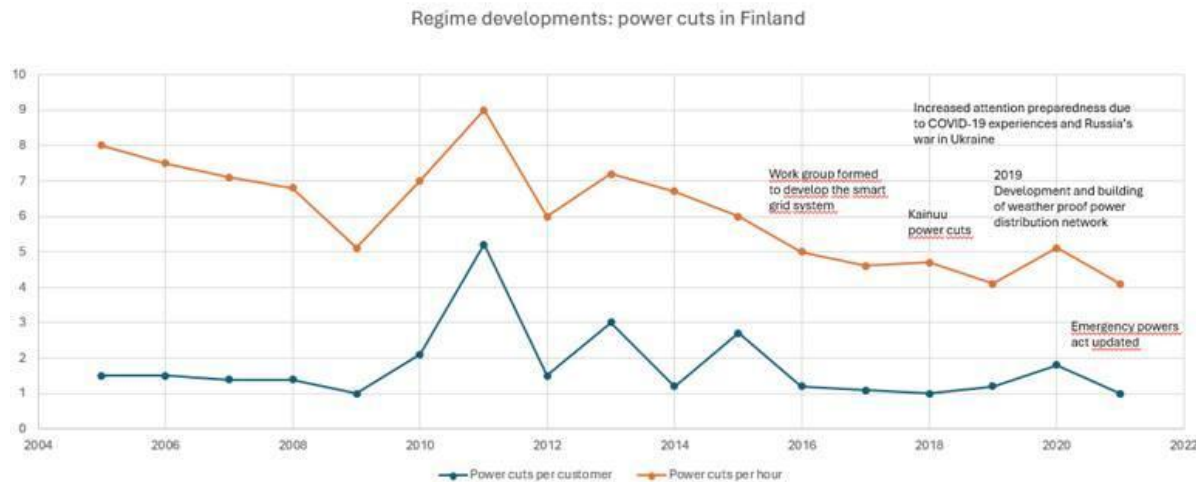


Figure 6.2.1: Power cuts in Finland. From Energynews ([Source: https://www.energiauutiset.fi/kategoriat/markkinat/investoinneilla-sahkokatkoja-vastaan.html](https://www.energiauutiset.fi/kategoriat/markkinat/investoinneilla-sahkokatkoja-vastaan.html))

Chronological description of graphs of patterns over time:

As visible from the graph, large-scale power cuts are quite rare in Finland and they occur mainly due to windy storms and thunderstorms. However, power cuts are more common in rural areas because of a different structure of the power grids. Whereas in cities and populated areas networks tend to be ring-shaped and ground-cabling is preferred, in rural forested areas overhead lines are still in use, which are more exposed and vulnerable for damages due to weather and trees falling on the lines. Due to long distances, the power lines in the rural areas take more time to be fixed (Ministry of the Interior 2020).

A significant factor in this historical example is the power system in Finland. The system consists of power plants, the main grid, high-voltage distribution networks, other distribution networks, and electricity consumers. Households are connected to distribution networks, while industry, commerce, services and other demand facilities (such as agriculture) connect either to the main grid or distribution networks, depending on the case (Fingrid 2024). In Finland, distribution networks are operated by electricity network companies. There are just under 80 companies in total. A household can put its electricity supplier out to tender, but the electricity user is tied to the electricity network company in whose jurisdiction the place of use is located. In Kainuu, Loiste Oy is responsible for the distribution network. The electricity service network company Kajave has a total of about 13 800 km of electricity network in Kainuu and North Ostrobothnia. In Finland, electricity network companies have a legal obligation to develop distribution networks. The companies are regulated by the Energy Authority (Energiavirasto), to which they submit their development plans every two years.

Dynamics at regime level

The power cuts happened during the Christmas holiday season and approximately 6500 households were left without electricity for five days. Although the response from officials was at first ununified and the fixing of the power lines took a long time, the locals in the small villages in Kainuu survived the power cuts, showing great resilience and preparedness. Finns have been encouraged for decades to keep a home emergency supply kit in case of emergencies, such as large scale power cuts or conflicts. This home emergency supply recommendation includes maintaining a supply of water, food, medications, batteries and light sources (candles, torchlights etc.) to last at least a week. It has been recommended that this supply would be constantly maintained as a part of the household supply. Information and awareness about the home emergency supply kit is spread by the Finnish National Rescue Association (Rautavirta 2021). In addition, since 2008, the Ministry of Defence has produced guides for consumers and authorities to prepare for power cuts (Rautavirta 2021). Furthermore, people living in rural areas of Finland are better prepared for prolonged periods of emergencies than those living in more densely populated areas (Rautavirta 2021). In a recent comparison among Nordic countries and Estonia, Finland was ranked first in citizens' preparedness for emergencies (The Finnish National Rescue Association 2024). It can be said that there is a culture of preparedness in emergencies in Finnish households, especially in rural areas, such as Kainuu.

Furthermore, the remote villages of Kainuu joined the electricity grid in the 1970s, late compared to the larger cities in Southern Finland. Prior to that, the households produced electricity through aggregates, but it was very expensive to use a diesel engine and thus many households used the aggregate sparingly (Yle 2011). For example in Suomussalmi, a municipality in Eastern Kainuu, every third farm was without electricity in the mid 70s (Yle 2014). Therefore, electricity being available throughout the day is relatively new and people are more used to surviving without electricity compared to people living in cities.

CLD of regime level dynamics

<https://embed.kumu.io/6a00c7b568cfb51ba4eb7816f543a34a>

B1: power cuts → + response from officials → - power cuts

B2: power cuts → + improving infrastructure → - power cuts

R: response from officials → + collaboration between different stakeholders → + improving infrastructure

Niche level

Initiative goal: To make sure that everyone manages without electricity during the power cuts

Pattern(s) of key factor(s) at niche level: Extensive power cuts emphasised the need for preparedness and neighbourly help in challenging conditions

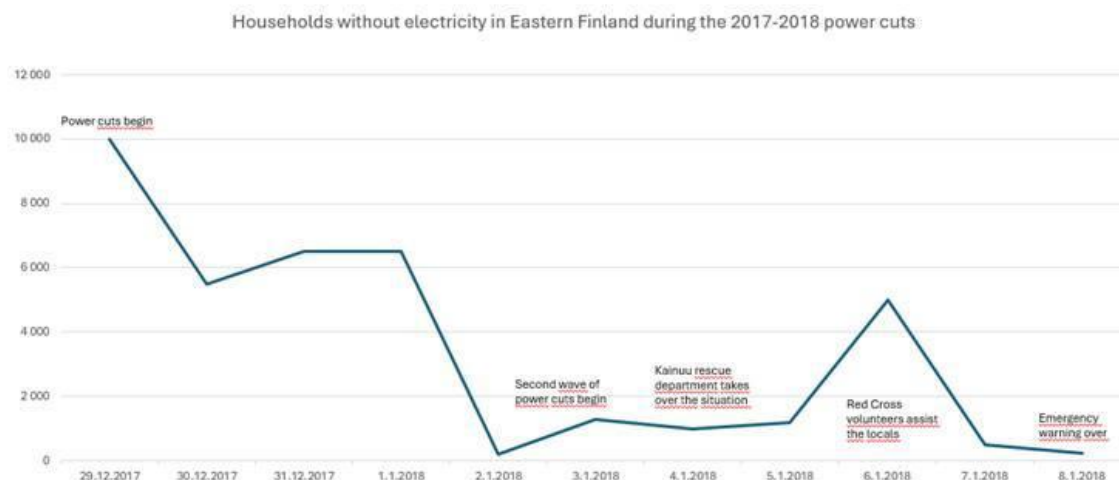


Figure 6.2.2: Households without electricity in Eastern Finland during the 2017-2018 power cuts

Chronological description of graphs of patterns over time

The graph above describes the number of households without electricity during the power cuts. The power cuts began on the 29th of December 2017, as thousands of households were left without electricity due to crown snow. 30.12 5000 households without electricity and an emergency warning given in the region. Thousands of homes continue to be without electricity for the next couple of days, but January 1st 2018 that number is reduced to only around 200. However, a second wave of the large-scale power cuts begin on January 2nd, as 1200 homes are without electricity. On January 4th, the rescue department took over the operation and a special unit was formed, consisting of municipality leaders, representatives from the power companies and other key stakeholders in the power cuts. Communications are unified and the rescue operations and fixing the power grid becomes more efficient, as knowledge is exchanged effectively between all key stakeholders. After the rescue department took over, help was requested from the national defence forces. During these days, volunteers from the Finnish Red Cross are going from door to door to help the locals. In the first week of January 2018, evacuations are considered, but the number of households without electricity is lowered to 500. By January 8th, the emergency warning in Kainuu was over, and the large-scale power cuts came to an end (Yle 2018).

Dynamics at niche level

During the power cuts, neighborly help was vital. According to the survey report by The Finnish National Rescue Association (SPEK), approximately 40% of the respondents received help during the power cuts. Although the Finnish rescue department played an important role in helping the citizens, the self-help movement was vital due to the long distances between towns and the closest rescue departments. Citizens checked in with their neighbors to make sure that they have enough to eat, heating and water. Almost half of respondents offered help to their relatives, friends, and neighbors. Overall, the resilience and the sense of community were highlighted as the main factors in the self-help movement (SPEK 2018).

After the first couple of days of the power cuts, the rescue department took over on January 4th, 2018. As the rescue department was the only stakeholder with the authority to request help from the national

defence forces, they immediately requested help in the form of providing vehicles that are designed for the extremely snowy and challenging conditions. The rescue department also took the responsibility of communications to prevent misinformation and mixed information to the residents of Kainuu. Until then, other stakeholders, such as the municipalities and NGOs had posted their own instructions. Therefore, giving the communications responsibility to the rescue department clarified the instruction to the citizens and to other stakeholders. The main task of the rescue department was to help citizens that were in danger due to the power cuts and to help with the fixing of the power lines. In addition to these tasks, the rescue department established a task force to manage everyday operations during the power cuts. The task force had members from the rescue department, electricity companies and municipal officers. This helped the flow of communication between different stakeholders. The task force met daily to share information and the current status of the rescue operations and the next steps forward. The task force had members from the rescue department, municipality leaders and power companies. The interviewees agreed that working together as a task force helped to coordinate the operations more efficiently as the information was shared together every day.

CLD of niche level dynamics

<https://embed.kumu.io/0678731ba2ee4ee8b1ab749852ddce15>

B1: negative effects of power cuts → + preparedness for emergencies → - negative effects of power cuts

B2: negative effects of power cuts → +the need for help from officials → - negative effects of power cuts

R: Preparedness for emergencies → + self-help → - the need for help from officials

6.2.5 Summary and Conclusion

6.2.5.1 Origin & Evolution of HE

The neighbor help movement was formed during the turn of the year of 2017-2018, when heavy snowfall got stuck to trees, which caused them to fall on power lines. This in turn caused vast power cuts in North Eastern Finland, especially in the Kainuu region, leaving thousands of homes without electricity. The key issues caused by these power cuts included lack of heating, water and phone calls not connecting. This region has vast rural areas with long distances between towns and villages. However, the village communities have a culture of neighbor, preparedness and resilience, which helped the local citizens to survive during the power cuts. This self-help movement included looking after neighbors, checking up on elderly neighbors and offering help if necessary. In addition to the self-help among the local citizens, the help provided from the rescue department, municipalities and NGOs were at a key role in helping to manage through the power cuts.

6.2.5.2 Organization & Activities of HE

The self-help movement wasn't an organized association, but rather a spontaneous movement, which was also encouraged by the municipalities and the rescue department. The municipality officials, NGO representatives and citizen volunteers would go from door to door and ask if anyone needed help. In addition, citizens offered to provide up to date information for the rescue department on which houses in the rural areas are inhabited and informed the power companies about the locations where the trees had fallen on the power lines. However, there were at times minor clashes between the niche and the regime level actors, as the citizens' willingness to help was at times excessive according to the interviewed

officials. The interviewed officials commented that there were more citizens willing to help than there was capacity or available tasks for citizens.

6.2.5.3 Goals & intended Outcomes of HE

In this historical example, the goal among the citizens was managing and surviving the power cuts. For the experts in this historical example, the key takeaways from the historical example was the building of cooperation among key stakeholders and how the lessons from the action plans can help with preparing for similar events in the future. In addition, the rescue department in Kainuu has shared their experiences and knowledge with their peers in other regions in Finland. Also, collaboration with NGOs with similar situations in the future was considered.

6.2.5.4 A multilevel perspective on the CAI using the MLP visualization

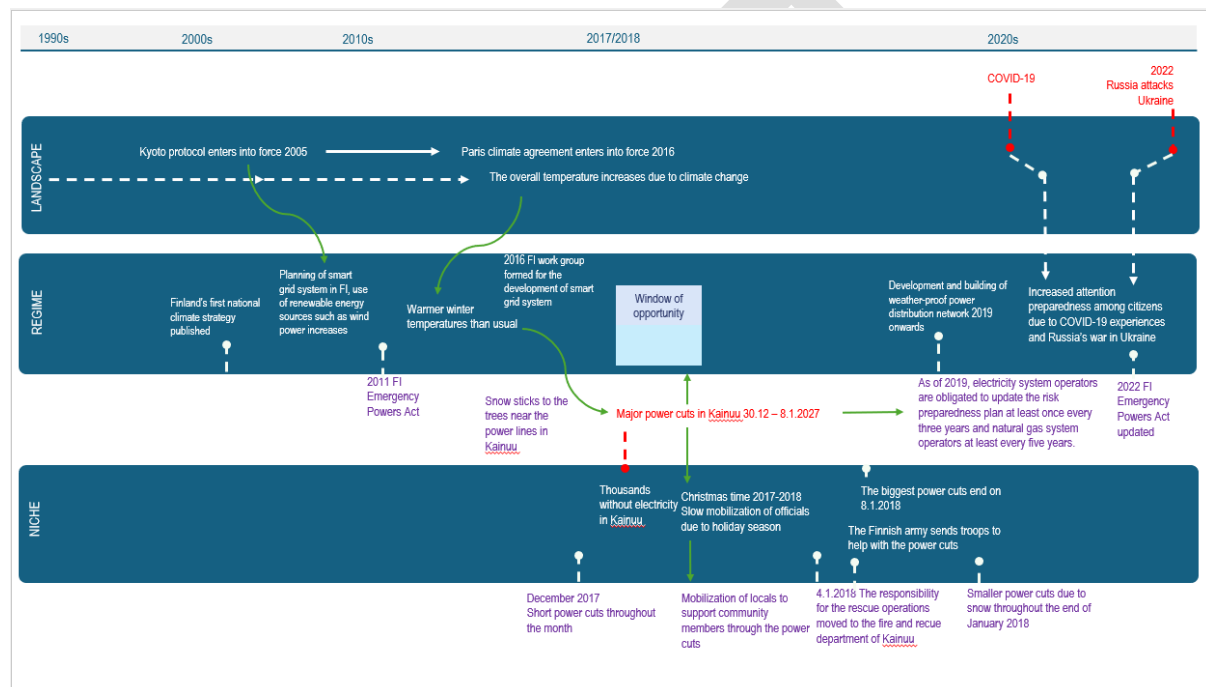


Figure 6.2.3: MLP visualization: Multilevel perspective on the CAI

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6.3 Earthquake in L'Aquila in 2009 (IT)

6.3.1 Interviews

6.3.1.1 Documentation of application of the method

The interviews were arranged following prior phone contact and preliminary fieldwork. In this phase, visiting the field and having informal conversations were key in building trust relationships in preparation for fieldwork and semi-structured interviews. 16 semi-structured interviews were conducted between July 2024 and March 2025. The data collected through this methodology proved extremely relevant and substantially enriched the information gathered through TA concerning SNA and SM.

Table 6.3.1 List of interviews

Reference	Interviewee	Date	Length
R1	Politician	26-09-2024	127m
R2	Politician	24-09-2025	55m
R3	Activist	09-10-2024	55m
R4	self-made ecovillage activist	26-09-2024	69m
R5	Citizen and writer	25-09-2025	107m
R6	Activist and then politician	23-09-2024	109m
R7	FuoriGenere activist	23-07-2024	46m
R8	Activist and then politician	27-09-2024	105m
R9	NGO's member	11-02-2025	70m
R10	Activist	25-09-2024	52m
R11	Engineer and Activist	27-09-2024	71m
R12	Families of Earthquake Victims	24-09-2024	59m
R13	Women's House activists	25-09-2024	71m
R14	Activist	19-08-2024	61m
R15	Self-made ecovillage activist	24-07-2024	68m
R16	Active Solidarity Brigades activists	28-09-2024	122m

6.3.1.2 Results: CAI emerging, transforming, and impacting CAI emerging

The CAI emerged spontaneously following the April 6, 2009, earthquake. The network committees and associations were formed by citizens acting in response to the emergency and the command-and-control approach under the leadership of Berlusconi's fourth government (R13, R12, R11, R15, R16, R10). The declaration of a state of emergency, along with the militarization of the territory, was reported by most interviewees as a key trigger of early mobilizations. The CAI formed from this experience did not have a defined ideological vision; rather, it brought together committees with different political orientations, cooperating in their opposition to a perceived "enemy" embodied by the state, especially the Prime Minister and the head of Civil Protection (R6, R14, R3) (Comitato 3e32, 2021, Di Cesare, E. 2019, Poccia, D. 2019, Alexander, D. 2010, Arcuri, A. 2019). The interviewees perceived the national intervention by the central government as an external meddling within local affairs to promote private interests over collective well-being. An interesting fact is the association that most of the interviewed made by comparing the post-disaster militarization of the seismic area with a zone of war and military occupation.

The 3.32 Committee stood out as the first group, mainly young people aged 25–30 with leftist political experience, to organize a self-managed camp that welcomed emerging committees of various

orientations, promoting coordination and creating a social space to contrast the disaggregation of social tissue. The CAI was therefore made up of several newborn activations, of which 3.32 took coordination. The first significant mobilization, titled 100% Reconstruction, 100% Participation, 100% Transparency, took place in Rome upon news of the C.A.S.E. project, promoted by the Prime Minister and in conjunction with the G8 meeting in L'Aquila (R1, R11, R2, R5). The C.A.S.E. (Complessi Antisismici Sostenibili Ecocompatibili) project was implemented for the first (and last) time in L'Aquila in the form of 4,449 apartments distributed in 185 three-level apartment buildings, comprising prefabricated units of various types (wood, concrete, iron, plasterboard) on a reinforced concrete base. The project cost more than 800 million euros (about 180,000 euros per dwelling) and accommodated around 14,000 displaced people (Di Cesare, E. 2019, Imperiale, A. J. & Vanclay, F. 2019; 2020). The protests also targeted the local government, which, according to CAI, was accommodating the national government in implementing the project. Local politicians have remarked on their support for the housing project as necessary, even though they have also contributed to the CAI's emergence, recognizing its pivotal function of maintaining social cohesion and local engagement. According to the ex-mayor, his local support for the C.A.S.E. project stemmed primarily from a lack of short-term concrete alternatives to prevent the city's depopulation (R1). However, these new settlements were built on land frequently used for agriculture and acquired through expropriation (Coppola, Di Giovanni, 2020). The soil consumption was permanent, instead of temporary, as the UNDRR guidelines recommend, and not sustainable in terms of energy dispersion due to uneven surface isolation. The CAI opposed the project for more sustainable alternatives (R11).

The mobilizations followed the CAI's emergence and culminated in a turning point in 2010, when the head of Civil Protection came under investigation for corruption, and national media published wiretaps of two businessmen joking about the profits they would make from the reconstruction. The CAI coordination thus evolved into the Wheelbarrow Movement, which counted around 6,000 people who gathered in the city center, breaking into restricted zones (red zones) to protest the lack of progress in reconstruction (R3, R10) (YouTube, 2010, Video mobilitazione Carriole, L'Aquila 2010, Parisse, G, 2021). In the same year, the civic movement gave rise to the largest protest in L'Aquila, with 20,000 people demanding reconstruction and a suspension of taxes. It also marked the beginning of citywide public assemblies. These participatory meetings facilitated by 3.32 aimed at gathering citizens' opinions on social and economic reconstruction following the slogan "better than it was, where it was" (R5, R3). This shift also signaled a transition within 3.32 itself—from a purely political group to a civic one. Assemblies were described as unique experiences of "true participatory democracy" (R6).

CAI transforming and Regime changing

The shift from the Wheelbarrow Movement to citizens' assemblies took the form of civic mobilization aimed at demanding participation in the reconstruction process and asserting economic and social rights to the population. The movement was born with a strong focus on sustainability, by sorting and recycling all the rubble from the post-earthquake city. Since 2010, some activists have also opposed the SNAM gas pipeline project, one of the most significant fossil fuel projects in the country, for its 425 kilometers of pipeline, with a diameter of 1.2 meters, at an estimated cost of 2.5 billion euros. Although it was not a main focus during the activation of the grassroots committees and the 'wheelbarrow movement' onwards, the 3.32 Committee, in addition to opposing the SNAM project, also proposed the Mountain Festival, whose first edition took place in 2014 and is considered a small success of the mobilizations in L'Aquila (R3).

The assemblies were created following the efforts of sorting and recycling the rubble, and described as democratic spaces where different thematic groups were facilitated by 3.32 thanks to participatory methods (OST – Open Space Technology) to draft the popular initiative proposal for post-disaster reconstruction. It became evident that Italy lacked appropriate legal frameworks for risk prevention and disaster management (R10). Moreover, the appointment of the regional president as reconstruction commissioner, along with the end of the Berlusconi IV government, shortened the distances between the CAI and the regime, making the former feel empowered to have a greater impact (R10, R2) (Comitato 3e32.,v2021).

Once the Berlusconi IV government ended and the Monti one was formed, a new ministry was appointed for the reconstruction in L'Aquila. The 2012 Barca Law, which incorporated some of the popular assembly proposals, marked a substantial shift in how the post-disaster crisis and reconstruction processes were handled. The law localized reconstruction efforts in partnership with local municipalities and introduced social and economic incentives to support citizens' participation in the socioeconomic reconstruction of the city. The local government introduced participatory tools, such as the social budget, an economic mechanism allocating part of the budget to community-chosen social initiatives. These efforts, however, continued to face public distrust, especially considering the priority given to private reconstruction rather than public one (R2). The first spaces to reopen were commercial and tourism-related, while public and cultural spaces reopened last. The priority of private reconstruction contributed to atomizing the CAI's solidarity and gradually fragmented the broader civic movement. From 2013, civic participation started its decline and shifted toward formal politics; civic lists emerged, and some 3.32 members and former CAI activists ran with left-wing parties or civic lists (R6, R8, R11). The first 3.32/CaseMatte remained active as a social center and was joined by Fuorigenere, a transfeminist collective against gender-based violence (R7).

A dramatic shift in the city's political landscape occurred in 2017 when the left, which had been in power until then, was replaced by a right majority that won the local political elections. The CAI declined permanently as the same path of the participatory processes was replaced by the privatization of public spaces. The right's re-election in 2022 confirmed the trend and sparked despair among the same segment of the population that was activated in 2009: "We're not sure if we feel more dispossessed of the city today or right after the earthquake" (R8).

Niche's impacts

The data collected through the semi-structured interviews tells that the CAI had more socio-political impacts than socio-technical ones. The first CAI impact can be partially related to the institutionalization of local reconstruction offices (USRA and USRC), which, under the Barca Law, incorporated some of the citizen assembly proposals. More explicitly, the transformation of the niche from a political movement to a civic assembly laid the groundwork for a new post-disaster reconstruction law, which has been identified as the CAI's major impact. The Sicuri Per Davvero campaign, launched in 2019 by ActionAid—with direct involvement from a 3.32 activist—carried forward the content from L'Aquila's public assemblies advocating the national governments (R9, R10).

In these terms, the long-term goal of the niche has never changed: to define a national regulatory framework for post-disaster reconstruction. On the other hand, the short-term goals evolved in a dynamic of action and reaction with the regime, from opposing the mismanagement of the Civil Protection

Department (D.P.C.), intervention, passing through contrasting the C.A.S.E. project to take action within the wheelbarrow movement. The draft law, which underwent turbulent development across multiple administrations, was finally passed in March 2025 by the Meloni government. Although it includes some proposals from past assemblies, such as the remarks on transparency, it explicitly excludes affected communities from the reconstruction process, reaffirming the vertical power structures imposed by the regime over the past 15 years (ActionAid, 2019, Legge Quadro in materia di ricostruzione post calamità, XIX Legislatura, 2024).

Assuming that a CAI qualifies as a niche when it is localized and protected within the broader framework of mainstream society, it can be regarded as an innovative entity that introduces alternative solutions to the issues identified by the dominant regime. In addition to fostering innovation, it often promotes the development of new practices and forms of collective organization. In this context, the 3.32 Committee and, more generally, the grassroots mobilization that emerged in L'Aquila may be interpreted as a potential niche. Although it was not significantly shielded through stable financial resources, regulatory exemptions, or sustained institutional support, this initiative nonetheless enabled the community to express its voice and engage meaningfully in the political and social arenas.

6.3.2 Textual Analysis

6.3.2.1 *Documentation of application of the method*

The collected documents include scientific texts, newspaper articles, official documents, books, films, and podcasts, sourced through online research for citations (i.e. Google Scholar) and qualitative interviews. The textual analysis focused primarily on 10 selected documents produced between 2009 and 2025 by niche actors, the regime, and/or third parties such as NGOs and research institutes, specifically addressing the relationships between CAI and the regime, and mainly focused on the public and private dwellings reconstruction process. This selection is justified by the need to narrow the field and identify when and how the CAI is activated, recognizing factors that either drive or hinder socio-political innovation. The analysis examined the contents through a discursive approach, highlighting the texts' latent and manifest aspects.

6.3.2.2 *Results and main conclusions*

The analysis considered both latent and manifest contents of the materials. On an implicit level, through the analysis of national declarations and scientific documents, a clear hierarchical vision of intervention emerged in response to the emergency. Several documents typology (scientific papers, national declarations, grassroots online resources) report that on the night of April 6, 2009, at 3:32 a.m., a tremor with a magnitude of 5.8 on the Richter scale struck 56 municipalities in the provinces of L'Aquila, Teramo, and Pescara, causing approximately 1,600 injuries, and displacing 68,000 people, with 309 reported deaths. The 3.32 tremor was part of a seismic swarm that began in previous months and was not evaluated as a risk factor, referring to the minutes of the Great Risks Commission on March 30, 2009 (Comitato 3e32 2021; Alexander, D. 2010, Bono, I. 2009, Imperiale, A. J., & Vanclay F. 2019 Calafiore, G. 2012). The risk commission, composed of regime members (leading scientific authorities in the seismic field), declared with an official statement the unpredictability of stronger earthquakes based on the objective data collected, and it was necessary to discuss and provide guidance regarding what was defined as 'public alarmist reactions.' This statement was followed by a declaration from the deputy head of the Civil Protection Department (D.P.C.), reported by local media, which reassures the public by translating what was shared in the commission with an optimistic tone, conveying reassurance rather than preparing the

population for a potential disaster. The post-earthquake emergency phase was marked by the immediate intervention of D.P.C. through a process of power centralization (Emergency Government procedure), which consequently led to the outsourcing of public works (e.g., consortium Fintenza, Reluis, Cineas) and the derogation of system norms. The regime declarations (L'Aquila Municipality online webpage) refer to these facts as necessary to face the emergency and urgently start the reconstruction, which instead began only with the end of the state of emergency and the collaboration among national and local public administrations, in 2013. Several researchers (Imperiale, Vanclay, 2019; 2020; 2021; Alexander, 2010; Arcuri, 2019; Bono, 2009) within their scientific productions report a kind of criticism of the regime's attitude to intervene and prevent citizens, for example, from distributing meals and organizing social activities underlying the implicit relation of power imposed by the regime under the prime minister in charge.

On an explicit level, the CAI brings the mismanagement of the emergency to the surface from its publications (online articles and books), expressing its strong conflictual relationship with political representatives and overall, the community's need to be engaged in the material and social reconstruction of the city. CAI's publications consistently aim to deconstruct the narrative of the regime and encourage collective action through in-depth documents and researchers that unveil the blurred actions conducted by the government in emergency times. Particularly, the politicization of the niche is evident in the language of archival documents online. The calls to action are directed at citizens, inviting them to assemblies and public demonstrations. The documents produced are also addressed to the regime, particularly to political representatives. Despite the slow decline of the CAI since the start of the reconstruction process with the Barca law (LD 22-06-2012), niche's communications on web pages remain active so far, providing insight and information about the post-seismic events, updating news, and promoting cultural and musical events.

The regime documents analyzed are mostly normative and related to the state of emergency. The texts were analysed to clarify the legal and financial frameworks for reconstruction efforts and to understand how state authority was established in managing the crisis. From the analysis, the texts reveal that the approach to political representation, especially during the window of opportunity and in the context of the fourth Berlusconi government, is top-down and detached from the needs of the population, who are not considered relevant in the management of the housing, economic, and social crises. The rigidity of the power structure becomes evident in its relationship with the citizens, who are discouraged from active participation rather than encouraged to engage. The prevailing idea is to leave matters to those who are supposedly more capable (experts, technicians, politicians). This approach partially changed with the end of the Berlusconi government and the promulgation of LD 22-06-2012, based on the agreement between local authorities and national entities to reconstruct the city both socially and economically. Official declarations predominantly encouraged acceptance and support for the state-led reconstruction process, legitimizing political efforts and referring to L'Aquila's rebirth as a symbol of national and local resilience. These public statements do not recognize and/or refer to the citizens' protest and participation, which are indeed recognized by third-party actors (research papers, NGO projects) for the significant role that committee activations played in L'Aquila in response to the mismanagement of prevention, emergency response, and disaster management. Scientific resources analyse the post-emergency actions as critical to develop a participatory process of reconstruction, as internationally encouraged, and support the demands for transparency and participation expressed mainly by the CAI.

The main results of the analysis are related to documents mostly produced by the niche and the regime. Scientific documents have been key materials to investigate externally the relations among the two levels, referring to MLP, and contextualizing the post-emergency disaster interventions. Concerning interpretability and textual analysis, normative documents are not easily comprehensible due to the technical language, while official declarations are more accessible to citizens. Scientific articles mainly fall within the fields of sociology, anthropology, and urbanism concerning the post-emergency crisis and the reconstruction process. In contrast, reports and media articles provide spread and freely accessible perspectives. The media have been used also to access public recordings involving political leaders and entrepreneurs in ambiguous conversations on disaster: the phone call between the head of civil protection and the regional councilor the day before the call of the Major Risks Commission (called on the 31th march 2009), and the phone call between two businessmen who, on the night of the earthquake, were "laughing" and thinking about the profits they could make from the reconstruction. The newspaper articles about this last recording can also be analyzed according to the latent content. The article indirectly shows the regime's corruption and encourages the population to take part in the post-emergency management.

The methodology has been functional to support the researchers in reconsidering assumptions and/or substantiating hypotheses made before accessing the texts. It was assumed that the niche played a constant role in shaping post-earthquake recovery policies. However, as more scientific documents and media reports were analyzed, it became increasingly evident that CAIs were politically sidelined by the regime, only to be later brought into the spotlight during public assemblies and major protests demanding reconstruction and financial assistance. In particular, the CAI gained recognition from the local government, which eventually joined the protests against the central government. These protests were driven by frustration over the slow progress of reconstruction work and the lack of tax relief for the citizens of L'Aquila. The CAI was especially acknowledged by organized groups and non-profit organizations, who appreciated its grassroots participatory efforts. These collaborations led to the drafting of a citizen-led legislative proposal, which was then submitted to Parliament. Niche's internal and shared material has been crucial to linking the CAI to the start of the works and the national law on post-disaster reconstruction. For the research team, the niche was identified with 3.32/Casematte, particularly through the key actors within this movement. Through their personal relationships and professional work, these individuals shared their experiences and carried forward national initiatives, such as the Sicuri per Davvero campaign, which helped translate the early grassroots mobilizations following the L'Aquila disaster into actual regulatory outcomes. At the same time, the regime's documents largely maintained a top-down, command-and-control perspective that did not include the contribution that citizens and grassroots movements gave to the law's publication. The contrast between regime narratives (celebrative and focused on efficiency) and external analyses (critical of the lack of citizen involvement) highlighted an implicit power structure according to which the national communication does not recognize the activation of the niche and/or its contribution in shaping the new law on reconstruction post-disaster (2025).

Moreover, textual analysis has been functional in triangulating data from different sources that target multiple actors. It has been useful to identify significant topics to analyze and discuss during the interviews: the reconstruction process and mismanagement of civil protection, legal proceedings between citizens and the state, the law proposal on reconstruction post-disaster, and scientific evaluation of the seismic event.

6.3.3 Social Network Analysis

6.3.3.1 *Documentation of application of the method*

The Social Network Analysis (SNA) was carried out in two main phases. The first phase was based on Deliverable 1.2, which focused on stakeholder and context analysis. This initial step made it possible to classify and categorize stakeholders. The second phase was built upon data gathered through textual analysis and 16 semi-structured interviews, which enabled the identification of both conflictual and cooperative relationships among actors, as well as the types of resources they shared.

Specifically, Figure 6.3.1 presents a visual representation of these relationships at the moment of the "window of opportunity" (2009–2012), framed by the emergence of spontaneous committees and the introduction of the "Barca Law". Given that, the SNA visually identified key nodes within the structured network, such as 3.32/Casematte, the Municipality of L'Aquila, and the Department of Civil Protection. Moreover, the analysis has been able to highlight both enabling and obstructing factors to the development of the CAI. For instance, while strong cooperation among CAI actors emerged as a positive factor, as well as the strong initial confrontation of the CAI towards the civil protection department, the conflictual relationship with the prime minister emerged as a negative factor.

Some obstacles have been faced in analyzing the relational network of the CAI, largely due to the proliferation of committees formed in response to the post-earthquake emergency. The field was, therefore, narrowed to stakeholders who were available to take part in qualitative interviews. In these terms, 3.32/Casematte emerged as a focal point given its role as coordinator, and the system has been structured upon this assumption. However, the structure of the network remains dynamic, evolving in line with the data collected and flexible enough to be adapted according to which relations in the network the research wants to highlight.

6.3.3.2 *Results: Niche, Regime, and their interaction*

Niche

The Aquilan popular mobilization emerged in 2009 as a response to the top-down emergency management by the national government and to the exclusion of citizens from the reconstruction process. 3.32 was the youngest and most politicized among the newly formed committees and took charge of the popular activation. While the actors of the CAI pursued distinct objectives, they engaged in reciprocal cooperation to resist state interference and demand a comprehensive, transparent, and participatory reconstruction.

The relationships among the committees were primarily cooperative, aiming to enhance collective efforts and share cultural, moral, and human resources. CAI's internal divergences did not significantly affect the overall cooperation, especially during the peak years of mobilization from 2009 to 2011. One of the most connected nodes in the network was 3.32/Casematte due to its coordinating role within the CAI and its direct opposition to the regime. Notably, 3.32/Casematte facilitated the development of a post-disaster citizens' legislative proposal, some elements of which were later incorporated into the initial reconstruction law—the Barca Law D.L 22-06-2012.

3.32/Casematte also established a direct relationship with the residents who remained in urban tent camps, mobilizing primarily socio-organizational resources. The group worked to involve citizens in the legislative drafting process, encouraging collective deliberation on the disaster.

The strong cooperation among emerging committees began to decline in 2013 with the approval of the Barca Law on reconstruction. The onset of private-sector reconstruction contributed to the fragmentation of collective action and the weakening of internal ties. In recent years, actors such as GSSI and ActionAid have cooperated with 3.32/Casematte. Some 3.32 activists have pursued academic careers, while others have engaged in international cooperation. These personal relationships and competencies helped to identify a potential "niche" within the CAI.

In 2019, ActionAid launched the *Sicuri per Davvero* campaign, incorporating demands from Aquilan citizens' assemblies into a framework law on post-disaster reconstruction that was later discussed in Parliament. The law was passed in March 2025 under the Meloni government, but still avoided the inclusion of legal obligations referring to participatory reconstruction processes.

Regime

Within the SNA framework, the regime is represented by the following stakeholders: the Prime Minister, the Department of Civil Protection, L'Aquila municipality, and L'Aquila region. The Prime Minister was the one with the highest levels of power and interest. The second most prominent was the Civil Protection Department. Other political regime stakeholders included the Abruzzo regional government and the Municipality of L'Aquila, both of which had high interest and impact but limited power. As local government bodies operating under emergency rule, their autonomy—both decisional and regulatory—was curtailed by the state.

Notably, the Municipality of L'Aquila, represented by Mayor Massimo Cialente, had an ambiguous relationship with the niche, opposing it but at times supporting it by participating in public assemblies and popular demonstrations against the national government's approach to reconstruction and tax burdens. This dynamic is evident in the strong conflictual relationships between the niche and national institutions like the Civil Protection Department and the state, contrasted by weaker conflicts with the local municipality.

Actors within the regime shared strong cooperative ties, enabling the exchange of moral, human, and material resources. Within the regime, the research institute GSSI can be identified as a form of cultural sub-regime that cooperates with both the CAI and Aquilan residents. Citizens who were not mobilized by the CAI also engaged in cooperative relationships with both the CAI and the political regime.

Niche and Regime Interaction

The interaction between the niche and the regime was continuous between 2009 and 2012, changing notably after 2012 and drastically after 2017. From its formation, the CAI developed a direct and conflictual relationship with the regime. The primary axis of conflict was between the CAI and the Civil Protection Department, especially under Forza Italia party's leadership. The C.A.S.E. project was a significant point of contention for the CAI, intensifying feelings of opposition toward both national and local governance structures, such as the regional and municipal authorities.

During the window of opportunity, the relationship between the CAI and the Municipality of L'Aquila was primarily conflictual but also showed elements of cooperation, particularly during citizen assemblies and public protests. The relationship between the CAI and the regime evolved with the end of the Berlusconi government and the enactment of the Barca Law, which established local reconstruction offices for L'Aquila and the so-called "seismic crater".

After 2017, some CAI members joined regime structures following the gradual decline of informal participation, thereby transforming former conflictual relationships into cooperative ones between regime actors.

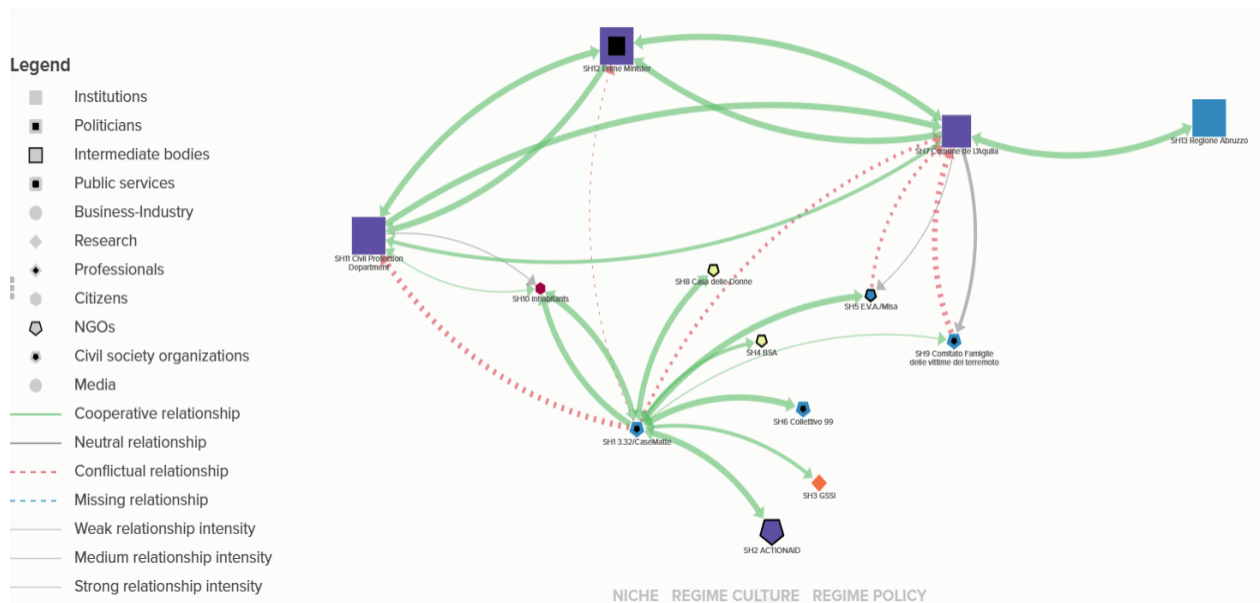


Figure 6.3.1: Niche and Regime Interaction

6.3.4 System Mapping

6.3.4.1 Documentation of application of the method

The development of the Causal Loop Diagram (CLD) is based on the information obtained from the textual analysis, interviews, and social network analysis. Initially, the collected data were examined to identify key factors and their patterns over time. The UNITO team has been supported by the face-to-face training received from the BOKU team, both online and during the General Assembly in Granada. This process posed challenges, particularly in identifying patterns and causal dynamics within complex events developed over a long time. In the last phase, the team produced the overall SM, separated into niche and regime, identifying different causal processes and their interrelationships.

The CLDs have been structured primarily on the data collected through the qualitative interviews when the researchers had the opportunity to clarify the value that pivotal variables had in shaping the CAI emergence and/or decline and regime change. Given the strong interconnections between niche and regime-level dynamics, some elements of the two CLDs are shared, producing different loops of balancing and reinforcing concerning niche and regime.

6.3.4.2 Results

Regime

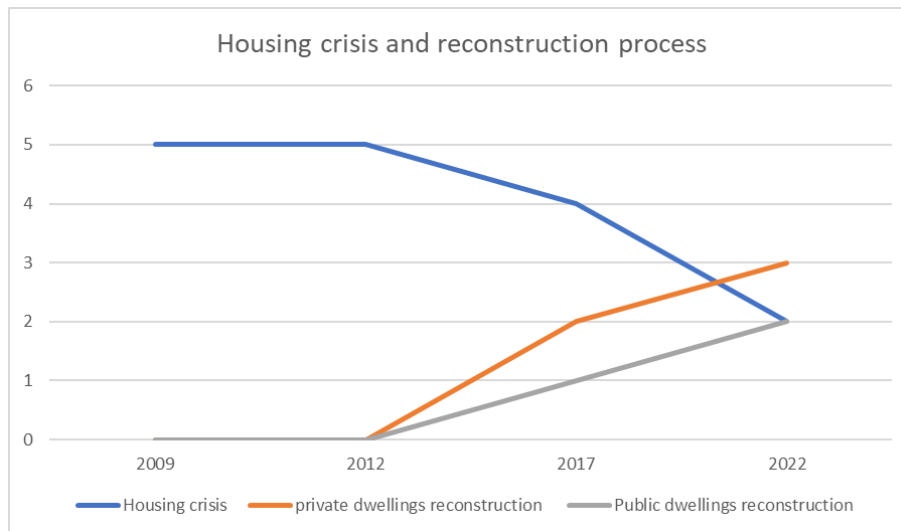


Figure 6.3.2: Housing crisis and reconstruction process (Regime level)

In the months leading up to the disaster, a low-intensity seismic swarm (magnitude 3) had begun to shake the ground, causing concern among the population. Thus, on March 31, the Major Risks Commission was convened. This commission serves as the link between the National Civil Protection Service and the scientific community. Its main function is to provide technical and scientific opinions on issues raised by the Head of the Department and to offer guidance on improving risk assessment, forecasting, and prevention. The final output of the commission reassured of the possibility of disaster's arrival.

On the night of the earthquake on April 6, 2009, 309 people lost their lives, and around 100,000 were displaced.

In 2009, L'Aquila was already in a state of economic and social stagnation, mainly due to the 2008 financial crisis, in which the disaster worsened significantly. The earthquake also marked the beginning of the state of emergency. Under these circumstances, legal provisions and budgetary constraints can be temporarily overridden, and decisional power converges entirely to the national government.

The population was divided between tent camps in the urban center and hotel facilities along the Abruzzo coast. The entire city was declared uninhabitable, designated as a "red zone," and placed under military control. Civil protection efforts followed the Augustus method of command and control, and the hierarchical approach discouraged community participation in managing the emergency.

Thanks to the mediation of the incumbent mayor, the central government's attempt to relocate L'Aquila's public offices—and consequently, most of the remaining tent-camp residents—was opposed. This plan would have entirely deteriorated the city's socioeconomic fabric. In the meantime, to address the housing crisis, the decree of April 28, 2009, established urgent interventions to support the populations affected by the seismic event as well as additional civil protection measures. This decree laid the groundwork for constructing "Aquila 2," which was later replaced by the C.A.S.E. and M.A.P. projects.

The C.A.S.E. (Complessi Antisismici Sostenibili Ecocompatibili) project was implemented in the form of 4,449 apartments distributed in 185 three-level apartment buildings, comprising prefabricated units of various types (wood, concrete, iron, plasterboard) on a reinforced concrete base. The project cost more

than 800 million euros (about 180,000 euros per dwelling) and accommodated around 14,000 displaced people. M.A.P. units housed approximately 7,000 people from neighboring countries at a total cost of 250 million euros. These settlements were built on land frequently used for agriculture, according to the current PRG (1979), and acquired through expropriation.

In contrast to the centralization of land-use planning by the government and the disintegration of the local community, several bottom-up committees were created by citizens. Among them, the 3e32 committee took the coordination of civic engagement and established CaseMatte as the operations center for 3e32. CaseMatte expanded the proposal of self-organization by becoming a place of aggregation, counter-information, and cultural production aimed at the social reconstruction of the city. Several assemblies mobilization and proposals followed between 2009 and 2011, some key example are the "100% reconstruction, transparency, and participation campaign, the mobilization against the G8 in L'Aquila (July 8, 2009), The wheelbarrow that took in the streets 6,000 citizens to tore down the red zone fences and began clearing rubble from the historic center (2010), The bottom up reconstruction bill, which gathers 50,000 signatures in one year.

The IV Berlusconi government ended in 2011, leading to the formation of the Monti technical government, which established the Ministry for the Reconstruction of L'Aquila. In 2012, the Barca Law institutionalized the local offices of USRA and USRC and incorporated some of the content shared in popular assemblies. From then on, informal participation began to decline, partially replaced by formal participation. Priority given to private reconstruction over public reconstruction fostered individualism over collectivism. In 2017, two coordination group members were elected as a minority in the municipal council, which saw a shift in the majority from center-left to right-wing. The new administration proved even more reluctant to encourage active citizen participation. During the same years, 3.32 underwent internal changes in its composition, with new generations revitalizing the city and carrying forward new objectives to this day.

Causal Dynamics (CLDs)

The earthquake of April 6 caused both a social and housing crisis and worsened the ongoing economic crisis. The "reassurance" approach of the Major Risks Commission fractured public trust in institutions. In response, the government declared a state of emergency, allowing it to bypass existing regulations. The population was divided between tents in the city center and hotel facilities along the Adriatic coast. Civil protection implemented a command-and-control method that limited citizen participation, increasing public discontent and distrust.

Meanwhile, the housing crisis and reconstruction efforts were addressed through an initial decree on April 28, 2009, which laid the foundations for the construction of the C.A.S.E. project—permanent housing proposed by the government in agreement with the local administration. The top-down management of the crisis led to growing resentment and the emergence of local committees, which organized various forms of mobilization between 2009 and 2011.

The CAI contributed to the nomination of a specific minister for the reconstruction process by Monti's government, which succeeded Berlusconi's in 2012. The beginning of the reconstruction process, accompanied by funds from Europe, undermined the CAI. In particular, the prioritization of private reconstruction individualized responses based on personal interests.

In 2017, citizen participation drastically shifted to a formal level, with the local administration changing from left-wing to right-wing, further solidifying its position in 2022 with a second term.

<https://kumu.io/fionalilith/it-sna-co-sustain#smaqregime>

LOOPS

B1) earthquake crisis management → - absence of a national law on reconstruction post-disaster → + creation of CAI → + citizens target national and local institution → + national responsibility for reconstruction in cooperation with local entities → + starting of public and private reconstruction → - the CAI is weakening → + trust in political institutions

B2) + exclusion of citizens from the decision-making process → - trust in political institutions → + creation of CAI → citizens target national and local institution → + national responsibility for reconstruction in cooperation with local entities → + starting of public and private reconstruction → - the CAI is weakening → + rising trust in political institutions

R1) Earthquake crisis mangment → + state of emergency → + command and control → + top-down projects respond to the crisis → - trust in political institutions → + creation of CAI → citizens target national and local institution → + national responsibility for reconstruction in cooperation with local entities → + starting of public and private reconstruction → - the CAI is weakening → + trust in political institutions

Niche

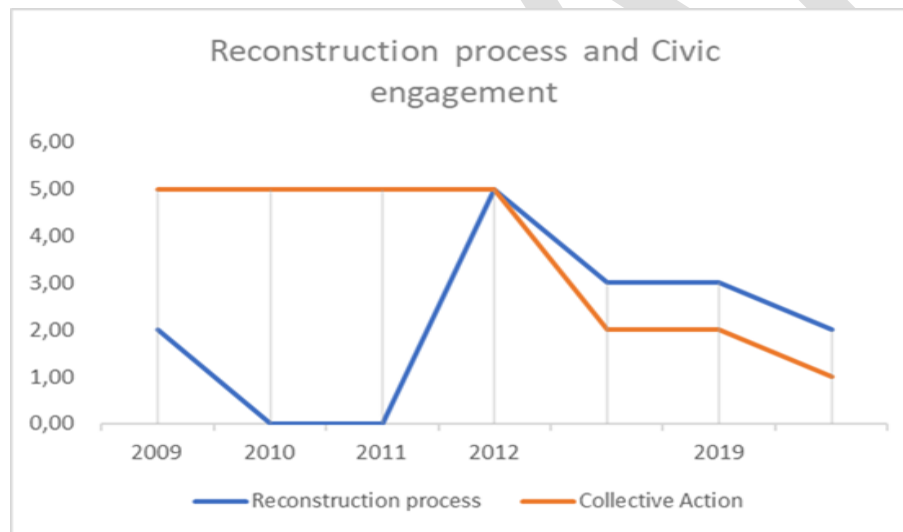


Figure 6.3.3: Reconstruction process and Civic engagement (Niche level)

During the winter of 2009, the L'Aquila area experienced a seismic swarm for months, with increasing intensity and frequency, heightening public concern. On March 31, the Major Risks Commission was convened but issued no alerts or official evacuation plans.

On the night of April 6th, a state of emergency was declared, and the Civil Protection Department was granted special powers, overriding existing regulations. The head of Civil Protection was appointed as the Extraordinary Commissioner for the emergency, completely sidelining local institutions. The population was divided between tent camps in the urban center and hotel accommodations along the coast.

The entire city was declared uninhabitable, designated as a "red zone," and placed under military control. The command-and-control approach, combined with a welfare-driven response, created frustration and anger among a group of young people in the tent camps. In response, they established an independent, self-managed camp, where they organized assemblies to monitor and analyze the situation together. They also held concerts, performances, and events to restore a sense of joy after so much suffering. Additionally, they sought to connect the various emerging citizens' committees, propose solutions to tackle the emergency, and plan for reconstruction. This led to the birth of 3.32, whose goals were:

- a) Recreating a shared and democratic space for the reconstruction of the city's social fabric.
- b) Participating in the reconstruction process.

The C.A.S.E. and M.A.P. projects, proposed by the IV Berlusconi government with the mediation of the local mayor to address the housing crisis, were key moments for the CAI. The frustration of being excluded from decision-making in emergency management and reconstruction laid the groundwork for the creation of Casematte, the operational center of 3.32.

By 2010, reconstruction had yet to begin, and the historic center remained a red zone. The well-known recording of two businessmen laughing on the night of the earthquake—anticipating their future profits—acted as a "detonator," igniting the anger of L'Aquila's residents. That same year, control of the emergency response shifted from Civil Protection to the regional government. The combination of public anger and the perception of power shifting closer, from the national Civil Protection to the regional government, culminated in hundreds of residents forcing their way past military checkpoints and entering the red zone of the historic center. This led to the birth of the "wheelbarrow movement": for months, every Sunday, thousands of people armed with wheelbarrows, shovels, buckets, and helmets defied the bans and returned to their streets and squares. The 3.32-coordinated citizenry gathered in a permanent assembly in Piazza Duomo, organizing meetings to envision a fair and sustainable reconstruction while laying the groundwork for a proposed post-disaster reconstruction law.

The CAI contributed to the Monti government's appointment of a dedicated minister for the reconstruction process (the Monti government succeeded Berlusconi's in 2011). The beginning of reconstruction, accompanied by funding from the European Union, weakened the CAI. In particular, the prioritization of private reconstruction led to individualized responses based on personal interests.

By 2017, citizen participation had drastically declined and partially shifted to a formal level as the local administration transitioned from left-wing to right-wing.

In 2019, ActionAid launched the "Sicuri per davvero" campaign, largely thanks to the involvement of a 3.32 member who brought the assembly's demands into the NGO where she worked. The campaign developed the first set of guidelines for prevention and reconstruction, advocating for a unified national reconstruction law based on the L'Aquila assembly process and subsequent disasters, such as the 2016 earthquake in central Italy.

In 2021, the first Reconstruction bill draft was approved by Prime Minister Draghi, responding to one of the main demands of the "Sicuri per davvero" campaign. When the Draghi government ended, ActionAid and its partner organizations continued their advocacy and lobbying efforts, targeting new candidates from earthquake-affected regions. However, the delegation law proposed in Parliament under the Meloni government in 2023 and published in the Official Gazette in 2025 did not maintain continuity with the code approved under the Draghi administration. Despite hearings and advocacy efforts by organizations

involved in the "Sicuri per davvero" campaign, the new law does not include mandatory public participation.

Causal Dynamics (CLDs)

Following the 2009 earthquake, a state of emergency was declared, and the head of Civil Protection was appointed as the Extraordinary Commissioner for the emergency. The population was divided between tent camps in the urban center and hotel accommodations along the coast. The entire city was declared uninhabitable, designated as a "red zone", and placed under military control.

The command-and-control approach, along with the welfare-driven response to the population, created anger and frustration among a group of young people in the tent camps. In response, they established an independent, self-managed camp in Unicef Park.

Several committees were formed, including 3.32, which from 2009 to 2012 self-organized with the following goals:

- a) Recreating a shared and democratic space for the reconstruction of the city's social fabric.
- b) Participating in the reconstruction process.

The rigid and top-down management of the housing emergency led to frustration among the emerging committees. By 2010, reconstruction had yet to begin, and the historic center remained a red zone. The infamous recording of two businessmen laughing on the night of the earthquake—anticipating future profits—acted as a "detonator," igniting the anger of L'Aquila's residents. That same year, control of the emergency response shifted from Civil Protection to the regional government. Consequently, hundreds of residents forced their way past military checkpoints and entered the red zone of the historic center, leading to the birth of the "wheelbarrow movement. A year after its formation, a Reconstruction Commissioner was appointed by the Monti government, along with the creation of local offices (USRA and USRC). The focus on private reconstruction weakened collective action, which declined from 2013 onward, until by 2017, it had partially transformed into formal participation.

From 2017 onward, with the local administration shifting from left-wing to right-wing, the CAI further declined.

In 2019, ActionAid launched the "Sicuri per davvero" campaign in partnership with other organizations. The campaign built upon the demands of L'Aquila's citizens' assemblies pushed forward the proposal for a comprehensive post-disaster reconstruction law, also considering following disasters, such as the 2016 earthquake in central Italy.

The law was approved under the Draghi government in 2021 but was later abandoned due to the COVID-19 pandemic and the Conte government. Under the Meloni government, the post-disaster reconstruction law was rewritten without considering the work done under the Draghi administration. It was published in the Official Gazette in 2025, excluding mandatory public participation.

<https://kumu.io/fionalilith/it-sna-co-sustain#niche>

LOOPS

R1) + intermediations of No-Governmental Bodies → +law on reconstruction post disaster → + formal participation increase → + The CAI is weakening



B2) - earthquake's crisis management → + command and control → + top-down projects to respond to the crisis → + Citizens' feelings of anger and frustration →+ creation of CAI →+ CAI's demonstrations and public assemblies → law on reconstruction and post-disaster

B3) - earthquake's crisis management → + command and control → + top-down projects to respond to the crisis → + Citizens' feelings of anger and frustration →+ creation of CAI →+ CAI's demonstrations and public assemblies → +Reconstructions process starts → + the CAI is weakening → + intermediations of No-Governmental Bodies → +law on reconstruction post disaster

6.3.5 Summary and Conclusion

6.3.5.1 *Origin & Evolution of HE*

The CAI emerged in 2009 in response to the disaster, the emergency phase's mismanagement, and the reconstruction process's long-term start. The national regime did not recognize the niche's actions as influential to the status quo, whereas the local regime acknowledged its role as a social glue during a crisis. From 2009 to 2011, the CAI experienced its peak period of mobilization. During this phase, 3.32/Casematte coordinated demonstrations and initiatives, primarily involving politically active youth from leftist backgrounds.

A significant transformation of the CAI occurred in 2010 with the rise of the "Carriole" movement. In response to the delays in reconstruction, growing corruption among regime actors, and a collective willingness to participate in decision-making, the movement organized actions to bypass the barriers around the red zone, collect rubble, and convene a citizens' assembly tasked with drafting a post-disaster reconstruction bill.

From 2013 onward, CAI mobilization gradually declined, deteriorating entirely by 2017 with the local elections. The newly elected right-wing administration left no room for the participatory practices that had gained momentum under the Barca Law.

Institutional third parties, such as ActionAid, promoted national recognition of the niche. They inherited the legacy of the Aquilan citizens' assemblies and carried it forward at the national level by drafting a framework law on post-disaster reconstruction.

Over the past 15 years, 3.32/Casematte has remained a focal point in L'Aquila's urban center. Having evolved into a social center, it continues to carry out mobilization and counter-information initiatives. 3.32/CaseMatte has seen four different generations of the youngest being engaged, and nowadays functions as an aggregate cultural and social space. The three main areas of intervention are supporting the local population, encouraging civic engagement, and promoting relevant international initiatives against war and colonialism. Within CaseMatte, "FuoriGenere" was born as a trans-feminist collective in 2012 following an episode of rape by a soldier of Operation Safe Streets (l.125/2008).

6.3.5.2 *Organization & Activities of HE*

The activities carried out by the CAI have been diverse and shaped by the degree of participation of the broader citizenry. Moreover, these activities were influenced by the power dynamics within the regime, particularly concerning the national government. Between 2009 and 2011, the actions undertaken by the CAI evolved significantly from political activities to civic ones.

Up until 2010, the CAI was primarily driven by acts of public dissent, such as demonstrations, protests, and occupations. However, with the emergence of the "Wheelbarrow" movement, the main form of

opposition to the regime shifted toward civic engagement. The CAI began organizing citizens' assemblies, from which the proposal for a popular post-disaster reconstruction law would later emerge.

This transition—from protest to proposal—was marked by non-violent actions and open communication initiatives aimed at both the general public and politics. The shift from informal to formal participation occurred gradually as the CAI's informal mobilization weakened.

Starting in 2017, some CAI members entered the local government as part of the minority opposition, attempting to counter the regime through institutional and electoral participation.

6.3.5.3 *Goals & intended Outcomes of HE*

The main objectives achieved by the CAI can be traced back to the realization of the Barca Law in 2012, which marked the beginning of both public and private reconstruction efforts in collaboration with local authorities and the citizenry, and the proposal for a popular law on post-disaster reconstruction (2019). These objectives are best interpreted as attempts at socio-political rather than socio-technical innovation, primarily involving a cultural shift in perception and response to the emergency, coupled with a change in the power dynamics between the regime and the niche.

These actions have had successful impacts when viewed within a systemic framework. The involvement of third parties in the institutionalization process of the proposed law (NGOs, scientific institutions, national networks), the occurrence of subsequent disasters (such as the floods in Genoa in 2011-2014, the Central Italy earthquake in 2016, and others), along with the regime's difficulty in responding, contributed to the possibility of regime penetration and the eventual promulgation of the new law on reconstruction in March 2025. However, the law still maintains the hierarchy imposed by the regime's power structure, failing to explicitly mandate the inclusion of the population in the decision-making and reconstruction processes.

6.3.5.4 *A multilevel perspective on the CAI using the MLP visualization*

The graphical representation of the Multi-Level Perspective (MLP) identifies the window of opportunity 2009-2012 (WoO) during which the weakened regime increases its control over local affairs. In response to the command-and-control approach inherent in the state of emergency declared by the national government, the CAI emerges. The CAI emerged and transformed due to regime changes, and citizens' engagement influenced the appointment of a Minister for Reconstruction, who will officially initiate the process of both public and private rebuilding, and lay the groundwork for the draft law on post-disaster reconstruction. This law would eventually be approved in March 2025, a full 16 years after the L'Aquila earthquake in 2009.

The MLP also identifies both stabilizing and destabilizing variables of the status quo, which, even indirectly, may encourage and/or affect the penetration and spread of political and social innovation. While the start of the reconstruction process and the shift in the local political majority contributed to the decline of the CAI, the broader landscape destabilizations caused by subsequent disasters, together with the formalization of the draft law (supported by third-party actors such as ActionAid) played a key role in enabling the niche to partially penetrate the national regime. This occurred despite the persistent impermeability of local political institutions to novelties.

As the graphic shows, after 2017, the local political elections were won by the right-wing party, which contributed to the decline of CAI and, more generally, to citizens' participation in policy making.

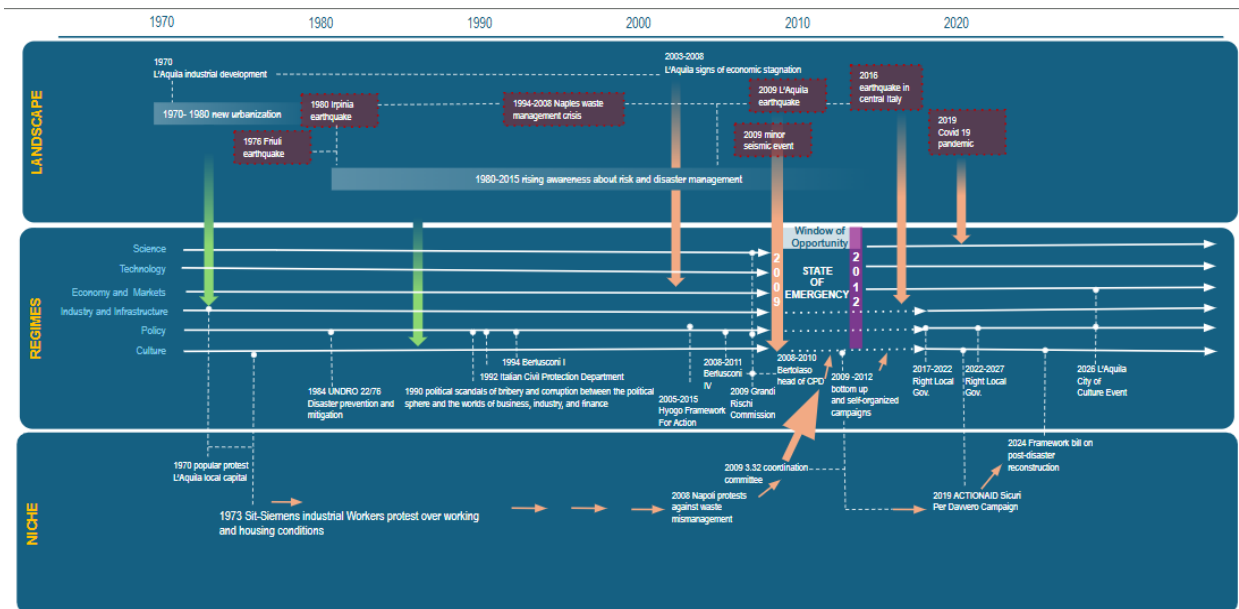


Figure 6.3.4: Multilevel perspective on the CAI using the MLP visualization

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6.4 Flood in Genoa in 2011 (IT)

6.4.1 Interviews

6.4.1.1 Documentation of application of the method

The research initially took the form of two exploratory interviews conducted in March 2023 with two people who had participated in the wave of popular solidarity that followed the floods of 2011 and 2014 in Genoa. In 2024, 14 interviews were collected in the city of Genoa through field research carried out in several phases. Collective actions were selected trying to cover all the main political-cultural environments that emerged from the exploratory interviews and textual analysis: (a) the Catholic socio-political component, (b) the secular socio-political component, and (c) the institutional component. On several occasions, the interviewees were met at the headquarters of their civic, political, or religious organisations or in the places where they had been active following the flood and subsequent mobilisations. All the SHs listed in the SH analysis were contacted for one or more interviews.

Table 6.4.1 List of interviews

Reference	Interviewee	Date	Length
R1	Buridda activist	18-09-2024	90m
R2	ARCI, Centro documentazione Archivio Libertario activists/ focus group	19-09-2024	
R3	Amici del Ponte Carrega activist	16-09-2024	118m
R4	Aut-Aut activists/focus group	19-09-2024	73m
R5	Circle of the Communist Refoundation Party Bianchini members	19-09-2024	86m
R6	Politician	18-09-2024	88m
R7	Pinelli activist	17-09-2024	57m
R8	Scout member	19-09-2024	
R9	Local parish	16-09-2024	64m
R10	University researcher	02-08-2024	72m
R11	President of the municipality of Media Val Bisagno	17-09-2024	59m
R12	Former high-level representative of the Municipality of the Bassa Val Bisagno	01-08-2024	87m
R13	Former member of the Vivere in Collina collective	18-09-2024	101m
R13	Citizen involved in the piazza Adriatico rescue efforts	30-07-2024	54m
R14	Circolo ARCI of Piazza Adriatico	19-09-2024	114m

During the first and subsequent contacts, it was expressly requested that it be possible to interview both men and women or non-binary genders and, if this was not possible, only women or non-binary genders. This allowed us to mitigate a dimension that nevertheless remains evident: the majority of the interviewees are male, and all the collective actions analysed proposed male representatives for the interviews. From this point of view, the most important exception is the self-managed laboratory Aut-Aut, located in the historic centre, where the person contacted (a man) brought with him three protagonists of the events (women). In other cases, such as during the focus group with the niche group, the participation of a woman from a certain point onwards did not allow for an in-depth appreciation of her point of view, as the male members of the group tended to intervene more assertively, leaving her little room to participate. A similar dynamic occurred during the conversations held with the managers and regulars of the ARCI club in Piazza Adriatico. The team did everything possible to ensure that the women present had their say and to take note of their point of view.

All of the interviewees are white, Italian-speaking, and born in Italy. We have reason to believe that this is a representative composition of the collective actions that were analysed. The composition is also uniform in terms of generation, as most of the people are between 30 and 40 years old, with some interviewees between 20 and 30 and between 40 and 50.

Before going into the field, the team developed a framework of questions and sub-questions based on the guidelines produced by the consortium. Given the particular nature of the historical example, some preliminary caution was necessary. It was, in fact, necessary to prompt the interviewees about the historical reconstruction through memories that could potentially be disturbing. The team had no way of knowing in advance if and to what extent the individual protagonists had been directly affected, or in their affections, by the two floods. For this reason, the first questions were separate, aimed at reconstructing the events, but leaving the interviewees the choice of how to articulate the reconstruction and where to start. The second part concerned the collective action and the direction it took, as well as its objectives. The third and final part of the interview concerned the perception of the impact that the collective action had on reality (regime and landscape), i.e., how much the protagonists believed they had succeeded in promoting solutions for the problems they had identified.

For each of the three parts of the interview, questions and sub-questions were formulated to keep the interview to no more than an hour. When the 60-minute mark was reached, the interviewees were asked if they wanted to stop or take a break. In all cases, the interviewees asked to continue, even when they had previously said that they had commitments beyond that time limit.

Firstly, the number of questions was kept to a minimum to allow the interviewees to express themselves for as long as possible without interruption. Hints were used very often to avoid having to ask new questions and to allow the interviewees to pick up the thread of the conversation after brief moments of interruption, possibly caused by their uncertainty about the relevance of their answers. The team intervened and redirected the dialogue flow in some cases, but only when (as in the case of a former civil servant) the attitude of the interviewee risked completely diverting and deconstructing the interview. In other cases, especially in the final phase, everything possible was done to let the interviewees be carried away by their memories, feelings, frustrations, or remorse so that their psychological defences didn't prevent them from formulating a critical and open judgement of what had happened and what they had experienced.

Secondly, we didn't want to proceed according to a predefined scheme in an intangible way. We accepted that the unfolding of the interview would contribute to determining its progress and the areas to be explored. The criterion used in this regard was the benchmark represented by the multi-level perspective as a general theoretical framework. Whatever specific aspect the interviewees showed to favour (the memories, the context, actions, ideas, impact) were allowed to flow and loosely structured from the outside, insofar as the emerging data appeared useful for the formulation of a multi-level dynamic, and made clear an idea of socio-political transition achieved or considered desirable and/or possible.

6.4.1.2 Results

To understand how the interviews for this HE were conducted, we need to consider the team's need to isolate a niche within a multiplicity of collective actions. The mobilisation after the Genoa floods was, in fact, varied and composite. According to some of the interviewees (R2,R3,R13) it is the mobilization and solidarity in itself that produces an alternative in the form of cooperative relationships that are different from those that are morally corrupt, put in place by state institutions, and which are merely speculative or extractive. The latter organised the response to the floods through a militarisation of the intervention (civil defence, military police) that proved inefficient and unable to respond to an effective chain of command (for the delays in the rescue operations, the mayor of Genoa, Marta Vincenzi, finally paid the price, as she was put on trial and convicted).

According to other interviewees, however (Bianchini; Amici di Ponte Carrega; Vivere in collina; Aut-Aut), popular solidarity in itself does not represent an alternative to the dynamics that led to the floods. To solve the problem of the construction of waterways, mountain erosion, and the concreting and waterproofing of urban surfaces, immediate relief is not enough; it requires prior and subsequent political reflection and elaboration. After the first review of the literature and textual analysis, the interviews carried out in the field allowed us, first of all, to focus on these two distinct dimensions of social mobilisation: (1) the construction of self-help and social solidarity in the face of inaction, delays or inefficiency on the part of the state; (2) the critical reading of what happened and the elaboration of alternative proposals for the governance of urban development and the protection of the environment.

The identification of the niche, therefore, took this distinction into account. All the collective actions, including those that acted in cooperation with the state and the police (the Catholic components: Agesci, Parish of Santa Margherita in Marassi), built relationships based on solidarity, albeit of different types. The main difference that emerged from the interviews is precisely the greater or lesser autonomy concerning the executive power: Agesci acted upon direct activation by the Ministry of the Interior, while the parish of Marassi built relationships with commercial actors in the territory thanks to the mediation of the Guardia di Finanza (an Italian police force). The collective actions that gathered around Bianchini, Aut-Aut, the residents of Molassana, or the group Quezzi Vivere in Collina did not prioritise this relationship or even avoided it. In the story of the ARCI club and the documentation centre in Piazza Adriatico, the very expression 'angels of the mud' is misleading: 'we are the ones that politics and the newspapers consider to be hooligans, delinquents, anarchists: we are the devils'. In their perception, the expression 'angels of the mud' is therefore hypocritical because it provides a watered-down representation of social actors who, having intervened in the first aid of working-class neighbourhoods, are normally viewed with suspicion or contempt (R09).

However, the team decided not to consider the simple element of collective first aid and immediate solidarity as an innovative factor that could lead the research to find a niche. The research, therefore,

focused on finding collective actions that had subsequently associated innovative, political, and transformative objectives with this type of intervention. Catholic collective actions explicitly excluded having such objectives. The secular components, on the other hand, described their objectives differently, but the common feature that emerged was the protest against the urban planning and environmental policy model that had contributed to the two floods. This is also where the connection with the climate change factor lies: all the secular components agree in attributing a decisive role to climate change in favouring crises of this kind.

It is among these collective actions that we have therefore looked for the most socio-political and socio-technical innovative elements, which would help us identify the niche. For this reason, we asked questions that could help the interviewees characterise the objectives in an increasingly precise and concrete way. On this point, a gap emerged between some CAIs, which showed that they had not developed an analysis or proposal on hydrogeological sustainability before or after the floods (perhaps limiting themselves to a generic criticism of neoliberal or capitalist extractivism or of unbridled urban development) and others that had. The latter are the collective *Vivere in collina* (Living in the hills) from the Quezzi neighbourhood and the association *Amici di Ponte Carrega* (Friends of Ponte Carrega) from the Molassana neighbourhood. The first CAI produced the interview with one of its protagonists and founders, while the second produced a focus group with four of the founders and a subsequent telephone conversation with one of them to explore some aspects in depth.

The difference between these two CAIs was due to (1) the different availability of documentary resources that they can provide on their activities; (2) the different socio-political impact; (3) the different articulation of the analysis and the socio-technical initiative produced. For all these reasons, the team finally decided to consider the main elements of innovation in the CAI *Amici di Ponte Carrega*. The latter has been able to become a political-intellectual catalyst for all the secular and progressive CAIs that have been active on the issue of hydrogeological sustainability after the floods of 2011 and 2014. It is worth noting that every time the team asked the CAI representatives to explain the details of their analysis and proposal on these aspects, a frequent response was to refer them to the *Amici di Ponte Carrega* for further information. The team then decided to use the textual material gathered from the interviews, focus groups, and conversations during the field research to reach the following conclusion: within the context of social mobilisation in Genoa, some collective actions were developed with different approaches and different innovative elements. This process gave rise to a niche of socio-political innovation, *Amici di Ponte Carrega*, which was the driving force not only of the critique of the regime and the study of the landscape but also of a strategy to have an impact on the regime.

The analysis of the social network of the niche that emerged from the interviews is therefore made up of (a) the CAI concerning the niche; (b) the technical component of the personnel of local institutions; (c) local institutions (political personnel and parties); (d) components of the academic world; (e) components of the socio-technical professional world (e.g. architecture firms). The weave of this social network emerged from the interviews and the analysis of documentary sources produced by and about the niche. To evaluate the impact of the niche on the regime, it was necessary to orient all the interviews towards the perception of the windows of opportunity that followed the floods and the eventual results obtained. All the CAIs, including the niche, showed that they did not believe that the mobilisation for hydrogeological sustainability and flood prevention in Genoa had produced great results or had substantially impacted the socio-technical or socio-political regime. On the contrary: the centre-left coalition elected on the wave of popular indignation caused by the flood of 2011 did not implement policies similar to those proposed by

the secular CAIs interviewed, and was finally defeated by centre-right parties in 2017 who, according to all the interviewees, are pursuing an urban planning logic opposite to the one they would have liked to promote.

In the case of the niche, however, some local disputes have materialised and produced ambivalent results. These struggles were conducted within the more general framework of opposition to the dominant urban planning model and the dominant culture of capitalism. They, therefore, sought to express a potentially different idea of democracy, which could nevertheless also find space within the current democratic institutions. These struggles were concentrated in the middle of the Bisagno Valley, in the Molassana neighbourhood, in the Ponte Carrega district and around Piazza Adriatico. Although locally rooted, these initiatives engaged with stakeholders of both citywide and national significance. Already, the first focus group with the association Amici di Ponte Carrega revealed this conflictual process with an important Italian cooperative, Coop, and the council majority in the municipality (centre-left). The latter includes the Democratic Party (PD) and the former Italian Communist Party (until 1991), historically linked to the Coop, which it had helped found during the Cold War. The Focus Group was then followed by a second interview with one of the members to clarify the process under examination.

Between 2011 and 2015, Coop carried out two different projects in the Molassana neighbourhood: a shopping centre and a DIY store (the 'Brico') and a complex consisting of a hotel and shops ('Guglielmetti'). Both of these projects were designed for an area severely affected by the 2011 flood. Nevertheless, the local council authorised the construction and even authorised a larger volume than that initially planned. The environmental organisation denounced these projects as further cementification and soil sealing, and the excavation of a large area of the slope that runs along the narrow valley. The project involved demolishing the 18th-century Carrega Bridge and building new bridges, widening the road at the expense of the river. The Coop, which could have built the two shopping centres in the redeveloped area, would have had to contribute to collective safety by carrying out work on the Mermi stream to prevent future flooding. The mobilisation carried out by the association, which contributed decisively to mobilising its social network, obtained some results even though it did not succeed in transforming the entire project.

The focus group with the niche and the subsequent interview tried to focus on this battle to investigate the niche's strategies for interacting with the regime and their partial success. The interview participants described (1) their activity of constructing a public debate on the existing socio-technical urban planning regime, involving academic staff and citizens; (2) the interest aroused by these initiatives among the municipality's technical staff, who attended several conferences and showed initial interest in some of the proposals; (3) the lobbying of the majority and opposition political parties, which led to the failure to authorise and implement the 'Guglielmetti' project; (4) the decision of the municipality not to demolish the Carrega Bridge and not to increase the number of car lanes along the river; (5) the partial safety measures taken for the Mermi stream; (6) the use of residual funds for the Mermi stream to start the redevelopment and partial safety measures for Piazza Adriatico.

Following the acquisition of this data and the subsequent phase of reviewing the literature and sources through textual analysis, the team outlined an MLP model where the preliminary, central, and subsequent phases of the window of opportunity produced by the social alarm and collective and public attention on the hydrogeological problem in Genoa are outlined. At the same time, hypotheses were developed on the causal links that affected the factors emerging from the SA and the SNA to produce an SM. The niche actors were made aware of the methodologies used, the nature of the work carried out by the team, and the

research process on their activity during the two discussions. They showed a keen interest in CO-SUSTAIN and expressed their availability for further interactions and collaborations during the project.

6.4.2 Textual Analysis

6.4.2.1 *Documentation of application of the method*

In July 2024, the literature review process was initiated using Google and Google Scholar, resulting in the identification of a diverse range of sources, including academic publications from various disciplines, journalistic articles, legal documents, social media content, blog posts, and audiovisual materials. The research team systematically reviewed and organized the collected material to reconstruct the relevant events, initially prioritizing sociological academic literature and subsequently enriching the analysis with journalistic sources—particularly interviews with residents from the affected areas.

Studying this material allowed the team to better understand the sequence of events and the difference between the social and political reactions to the floods of 2011 and 2014. On November 4, 2011, the flood was characterized by heavy rainfall over narrow areas, with about 500 mm of rain falling on the city in a few hours. The flooding of Bisagno and Fereggiano streams caused six deaths. Following the tragedy, the then-mayor was condemned: stream levels were not properly monitored, schools were not closed, and civil defense arrived late at the scene of the emergency. Also, on October 9, 2014, the flood was characterized by very heavy rains of about 395 mm in a few hours that caused overflow mainly of the Bisagno and Fereggiano streams, resulting in one death and flooding of large areas of the city between the lower and middle Val Bisagno. In this second event, no convictions were issued for the Mayor in charge.

It, therefore, became necessary to also consider non-sociological literature related to environmental sciences and urban planning. It emerged that the technical-political discussion surrounding the two floods concerned the general structure of Genoa's buildings, the urban planning model followed by policy makers and the authorities over the decades, and the environmental and anthropic causes that contributed to the significant rainfall in those years and the floods that followed.

The textual analysis involved mostly scientific publications from sociology and some from hydrogeology and environmental science. The analysis of journalistic publications tried to favour articles produced by the local press, even in periods distant from the days of the flood, to facilitate the emergence of different points of view that would allow a look at the entire socio-political process that affected the city. The web pages analysed were those of the two Facebook groups, already identified by previous research, which helped coordinate the immediate activation of spontaneous relief efforts and the collective effort to remove debris and avert danger to people. A blog was analysed, which offered a critical history of local urban planning policies concerning the flood events.

The next phase of textual analysis followed the decisive leads provided by the field research and the interviews and focus groups carried out in Genoa. As will be clarified in the next paragraph, the latter made it possible to circumscribe a collective action located in a specific neighbourhood and a niche that developed within it, useful for determining the multi-level dynamic of interaction between niche, landscape, and regime. The collective action represented by the mobilisation in the Molassana neighbourhood after the 2011 flood produced a niche of innovation consisting of the association Amici di Ponte Carrega (Friends of Ponte Carrega). The textual analysis of the following months, therefore, concerned the documentation published by the association on its blog and the journalistic, documentary, and artistic material available online about the areas where it operates, its ideas, and its activities. The

analysis of this material made it possible to define some decisive passages of the interaction between the regime and the niche regarding the securing of the area of Piazza Adriatico and Ponte Carrega.

The method applied during the analysis attempted to bring to light the latent and manifest elements of the discourse articulated by the different actors. First, we tried to determine who was speaking in the text under examination; second, what was being spoken by the text and in the text; finally, what were the explicit or latent messages, and with them the judgments that emerged from the text. Once this analysis had been completed, an attempt was made to connect the results with the parallel SNA, to transmit the results of the TA to the phase in which the team was busy developing the SM (from January to April 2025) and the MLP (on several occasions and in different phases: July-August 2024; October-December 2024; February-April 2025).

6.4.2.2 Results

As far as the textual analysis of academic literature is concerned, a distinction must be made between sociological literature and hydrogeological or environmental literature. As far as the first type of literature is concerned (very limited, with a not very advanced state of the art), the texts were written by university professors who, in some cases, used data collected by PhD students (the latter also wrote the most analytical chronology concerning the events of 2014). The social actors spoken of in this literature are social groups with blurred boundaries and extremely heterogeneous compositions: the thousands of people who took action immediately after the flood. Since it would be impossible to carry out a historical reconstruction or a sociological analysis of this entire social mobilisation, the publication on which we mainly based ourselves in the initial phase analysed the interactions of the people involved on social networks, and in particular on two Facebook pages, created in 2011 and 2014 respectively, referring to the expression 'Angels of the mud' to refer to those who took action to help in those days.

In general, the phenomenon and the subjects of the collective action were judged positively, especially in a latent way (and almost as a presupposition) by this literature. The very expression 'mud angels' is seen as positive or neutral. From the corpus, which includes articles, reports, documents and interviews we conducted, it emerges that the mass-media component mainly focused on the mobilisation immediately after the flood, highlighting aspects compatible with the description of it in terms of 'mud angels' (good-hearted people). The documents from the CAI and the niche organisation Amici di Ponte Carrega, on the other hand, focus on the critical issues of the political, prevention and emergency system. On this point, the CAI, which was united in the post-flood period, broke down into different currents, some of which, from 2012, began to build links with the scientific world in order to put pressure on the socio-technical and socio-political regime to produce urban innovation and more effective disaster prevention.

As far as the press is concerned, it is possible to say that the vast majority of the articles read come from the major national or local newspapers (e.g., La Stampa or Il secolo XIX) and the local editorial offices of the former. The tone of the story revolves around these axes, both in 2011 and in 2014: (1) Latent description of the flood crisis as a catastrophe with causes that transcend human action or activity; (2) Positive if not enthusiastic judgement on the collective solidarity expressed by a large part of the population in the face of the disaster; (3) Narration of individual experiences and figures taken as an example of the moral and civic value of the 'mud angels'.

The textual apparatus resulting from the documents produced by the collective actions that we have analysed is of a very different kind. In this case, it is not certain editorial offices that claim to have access to a wide range of readers but people who undertake a path of civic participation or activism with the

awareness that few will be the readers of their analyses. In some cases, the jargon and tone used suggest that the writers have the underlying belief that their texts will be read mainly by members or sympathisers of their group or similar groups. It would be impossible to summarise the wide range of opinions and sentiments that emerge from the texts analysed. In general, they have the tone of a denunciation and differ from the narrative of the local press on certain points: (1) The flooding is not seen as a phenomenon to be attributed exclusively to natural causes but also or predominantly to anthropogenic ones; (2) The latter are interpreted in a political key; (3) The political key tends not to focus only or predominantly on the local government, but on a method and an urbanistic way of thinking that is being accused.

In the final phase of the textual analysis, the one following the interviews and focused on the niche identified in the Molassana neighbourhood, further elements emerge in addition to those just listed. In the local press, the niche is described or allowed to speak through a mixture of manifest appreciation and latent suspicion. Often, the words of association members are carefully attributed to the niche itself, almost as if the journalist or publication felt the need to distance themselves from criticisms levelled at companies involved in problematic projects or local institutions. Furthermore, concerning the material produced by the niche, a deeper articulation of the systematic critique of the Genoese urban planning model and the power relations between political institutions and commercial and construction capital emerges. Niche's reports on the public discussions it organised with a group from the university world linked to urban planning and architecture, arguing that certain political choices were insufficient or counterproductive. Compared to other collective actions that were organised after the flood or that acted about the two floods, following textual analysis, the niche is capable of producing a very steep learning curve, to share new notions on the different possibilities of urban and environmental governance in the neighbourhood and beyond. If all this content is expressed openly, a latent mistrust or pessimism also emerges about the possibility that the political or business class will take charge of the citizens' needs for security and change.

6.4.3 Social Network Analysis

6.4.3.1 *Documentation of application of the method*

The Social Network Analysis (SNA) was conducted in two main phases. The first phase drew on Deliverable 2.1, which focused on contextual and stakeholder analysis. This initial step allowed for the classification and categorization of stakeholders. The second phase built upon data collected through textual analysis and semi-structured interviews, enabling the identification of both cooperative and conflictual relationships among actors, as well as the types of resources exchanged.

Figure 6.4.1 presents a visual representation of these relationships during the "window of opportunity" (2011–2014), characterized by the spontaneous emergence of self-organized grassroots initiatives involving businesses, political party groups, social centers, cooperatives, associations, scout groups, ultras, schools, parishes, and informal collectives—including many young people who became known as the "mud angels."

Civic engagement efforts were made possible thanks to pre-existing informal collaborations of varying intensity among the stakeholders involved. These actors coordinated and divided responsibilities until the arrival of the Civil Protection Corps, which assumed control of the emergency response. Although a formally consolidated, resilient, and self-organized community network did not emerge between 2011 and 2014—or afterward—collective initiatives continued to spontaneously activate in response to later crises, such as the collapse of the Morandi Bridge and the COVID-19 pandemic.

One of the key challenges in analyzing the CAI's network lies in the sheer number and diversity of actors involved during the window of opportunity and in the immediate post-flood emergency. The research focused on stakeholders who were available for interviews and demonstrated socio-technical and/or political motivations. Amici del Ponte Carrega drew particular attention for its civic engagement and counter-narratives, which aimed to raise awareness and propose alternative solutions to the hydrogeological risks affecting the area. Amici del Ponte Carrega emerged in 2011 as a new grassroots initiative aiming to collect and disseminate information about activities affecting the Molassana neighborhood. Their goal was to contribute local expertise to challenge the prevailing logic of resident exclusion from decision-making processes concerning the territory.

6.4.3.2 Results

Niche

The spontaneous mobilization of individuals and groups following the Genoa floods did not evolve into formal structures over time. Stakeholders associated with the CAI were identified mainly through semi-structured interviews conducted between summer 2024 and spring 2025. This effort was possible thanks to preliminary fieldwork and trust ties building among the team and research participants. Among these actors, pre-existing bonds of solidarity and cooperation played a crucial role in facilitating the initial emergency response. Stakeholders can be grouped into sub-networks based on ideological alignment (e.g., social centers), territorial affiliation (e.g., associations, religious institutions, local municipalities), and/or shared opposition to urban policies enacted by the local administration (e.g., universities, social centers, associations).

Amici del Ponte Carrega has been identified as the potential niche within the CAI's activation in the Molassana neighborhood. The association was created to involve residents in opposing local government initiatives that disregarded social and environmental risks for the territory and its communities. The association still collaborates with other groups and organizations, such as the Comitato di Piazza Adriatico (SH3), ARCI (SH15), and the Centro di Documentazione Archivio Libertario (SH2). Strong cooperative ties exist among these actors, rooted in the neighborhood's shared working-class identity and the common interest of regenerating civic participation after years of erosion. The types of resources exchanged among them are mutual and include cultural, moral, and socio-organizational competencies.

The conflict with institutional actors is expressed through a direct yet weak adversarial relationship, mainly due to representative institutions' impermeability and top-down decision-making process.

Since 2011, the niche has achieved two key objectives:

- Mobilizing a broad segment of the population and sparking greater public debate on the link between urban planning and flood prevention.

- Engaging with city council political forces, promoting legislative proposals, and opening communication channels with technical staff in the municipality.

These achievements stem from going beyond protests and investing in socio-technical learning, positioning itself as a niche for innovative proposals. Nevertheless, the niche has not succeeded in achieving broader socio-political or socio-technical transformations.

Regime

The regime is identified with key institutional actors: the Municipality of Genoa (SH12), the Civil Protection Department, and two of the municipalities most affected by the 2011 and 2014 floods—SH Val Bisagno (SH10) and SH Media Val Bisagno (SH11). Within the regime, stakeholders mainly develop cooperative relationships and exchange both material and human resources.

The crisis triggered by the 2011 flood led to open conflict between opposition groups and the Democratic Party, which was then governing the city. This political tension contributed to the party's replacement by a civic list in the following election.

The 2014 flood struck a city where the prevailing urban development logic remained largely unchanged. At that point, the CAI's potential influence on the regime began to decline and was effectively neutralized by the 2017 elections. These elections brought to power a majority aligned with traditional urban planning logic and the economic interests of overbuilding.

In the wake of these developments, the local municipalities of Val Bisagno (SH11) and Media Val Bisagno (SH11) also began to express distrust toward municipal urban policies. These tensions deepened after 2017, as the city government increasingly closed off dialogue with citizens and local representative bodies.

Niche and Regime Interaction

The relationship between the regime and the niche is best described as asymmetrically conflictual—primarily from the niche toward the Municipality of Genoa. The city administration promotes an urban development model that ostensibly aligns with environmental sustainability and territorial safety. However, it does not perceive Amici del Ponte Carrega as a threat, resulting in a relationship that is neither mutual nor conflictual from the municipality's perspective.

Nonetheless, the association maintains a collaborative relationship with municipal technical staff rather than elected officials. This collaboration focuses on organizing public events, gathering information, and informing citizens about hydrogeological risks and alternative approaches to local development, distinct from those proposed by the city government.

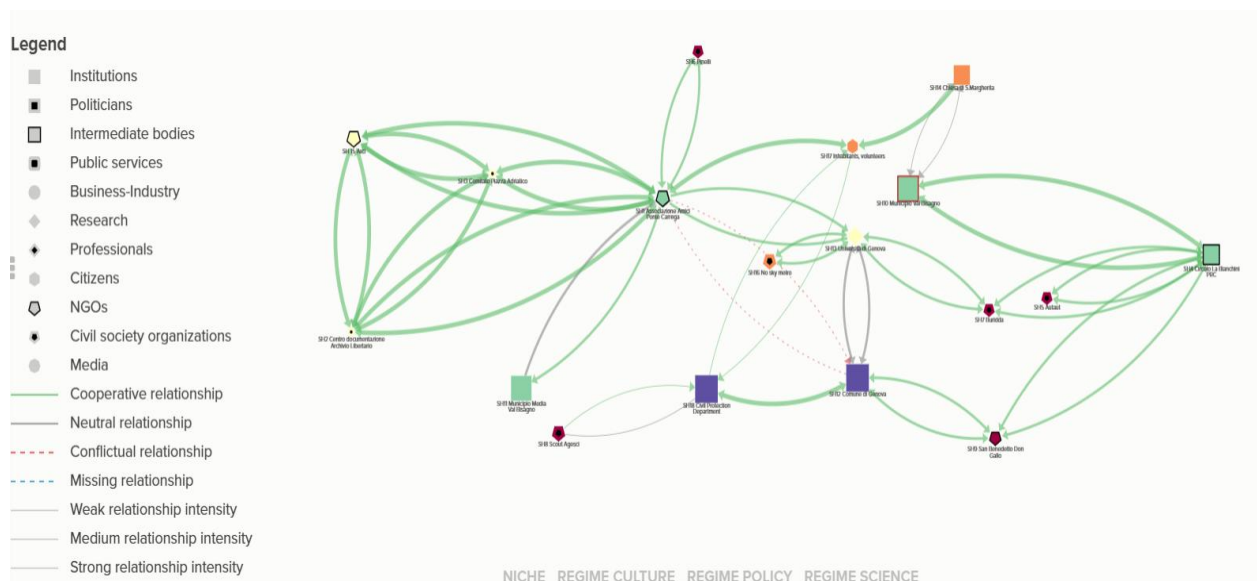


Figure 6.4.1: Niche and Regime Interaction

6.4.4 System Mapping

6.4.4.1 Documentation of application of the method

The UNITO team first analysed the literature on SM as recommended by the consortium experts and then followed the online training provided by CO-SUSTAIN. These were supplemented by the face-to-face training received from the BOKU team during the General Assembly in Granada. Meanwhile, in an initial phase, the team tried to practise by producing provisional CLDs on the niche and the regime, trying to reproduce archetypes. These first versions were analysed and discussed within the consortium. In the last phase, the team produced the overall SM, separated between niche and regime, identifying different causal processes and their interrelationships.

6.4.4.2 Results

Regime

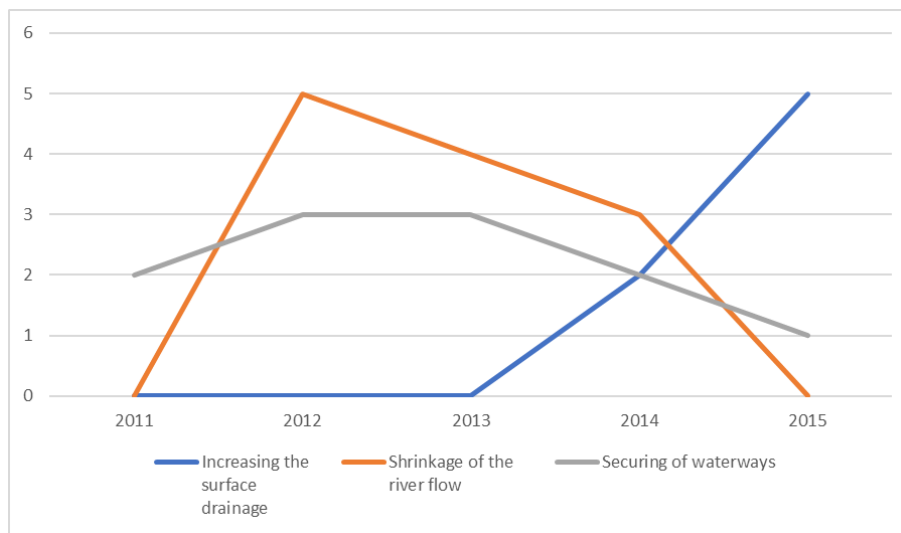


Figure 6.4.2: Patterns at Regime level

The system mapping regarding the regime can be understood starting from two distinct causal processes, which correspond to two distinct capital movements. On the one hand, the national funding line opened by the Italian government following the Genoa floods, and in particular after the one in 2001; on the other hand, the Next Generation EU funds made available to Italy during and after the Covid-19 pandemic, and translated by the Draghi government into the National Recovery and Resilience Plan (NRRP).

In 2011, the government's willingness to provide funding for projects presented by the municipal administration to mitigate the risk of flooding led to projects being designed quickly, partly due to the upcoming municipal elections. The team concentrated on analysing projects concerning the Bisagno Valley and, in particular, the Molassana neighbourhood. This allows us to focus on the government initiative concerning one of the most affected areas and relate it to the niche's activity.

The area redevelopment project to prevent further flooding involves the demolition of several bridges over the Bisagno river as they obstruct the flow of water, including the Carrega Bridge, protected by the Superintendency for Cultural Heritage because it dates back to the 18th century. At the same time, the intention is to further narrow the riverbed with the construction of additional car lanes on the left bank. The municipality also intends to authorise the excavation of a foothill area for the construction of a large artisan and commercial centre owned by CoopSette and a building complex including a hotel near the Guglielmetti Bridge, also owned by Coop. In exchange for the permits, the latter should complete urbanization works consisting of making the Mermi stream safe with public funds and private projects and labour.

After the 2012 elections, a new mayor and a new council, again centre-left but also linked to civic lists, redesigned the project under pressure from the niche and the CAI, who had taken action against the project, also contributing to the election of the new mayor. The possibility of an exemption to the protection of cultural heritage is dismissed, and therefore, the Carrega Bridge is not demolished; the road surface on the left bank is not extended, which would have further narrowed the river.

Both the Brico and Guglielmetti projects are confirmed, but the latter is blocked by the city council, where a majority of councillors vote against its authorisation thanks to the pressure and lobbying exerted by the

niche. The safety measures for the Mermi stream produce a financial surplus of tens of thousands of euros. The Municipality initially intended to monetise this sum for other purposes, but under pressure from the niche and the CAI of Molassana, it finally decided to allocate these funds to the redevelopment of Piazza Adriatico, one of the areas most affected by the 2011 flood.

The redevelopment project for Piazza Adriatico is participatory and involves the Nicchia and other CAIs in the area. It is also financed by and implemented thanks to funds from the NRRP. It is also being carried out through the transformation of the pavement to increase its drainage percentage. The draining surface in the neighbourhood has dramatically decreased due to the construction of the Brico building and the related changes to the road system (additional surface area of concrete road surface). This increase, which has already led to minor flooding in the area, has only been mitigated to a small extent by the securing of the Mermi stream and the increase in the draining soil surface in Piazza Adriatico. Overall, the risk of flooding has resulted in a flow of capital from the state to the city for its mitigation. How these funds were spent in Molassana has a negative impact, with a large part of the changes introduced by the regime contributing to increasing the risk. A further increase in risk, which would have been caused by the construction of the additional lane (narrowing of the Bisagno riverbed) and the Guglielmetti project, was avoided under pressure from the niche.

Overall, the socio-political regime showed an almost total lack of capacity for innovation in its conception of the city and its relationship with water. Not only did it not take into consideration the more far-reaching proposals put forward by the niche in this regard, but it also acted in a risk-mitigating direction almost exclusively under pressure from the niche and the other CAIs in the area.

<https://kumu.io/davidegrasso/he-genova#co-sustainsmhegenoaregime>

Niche

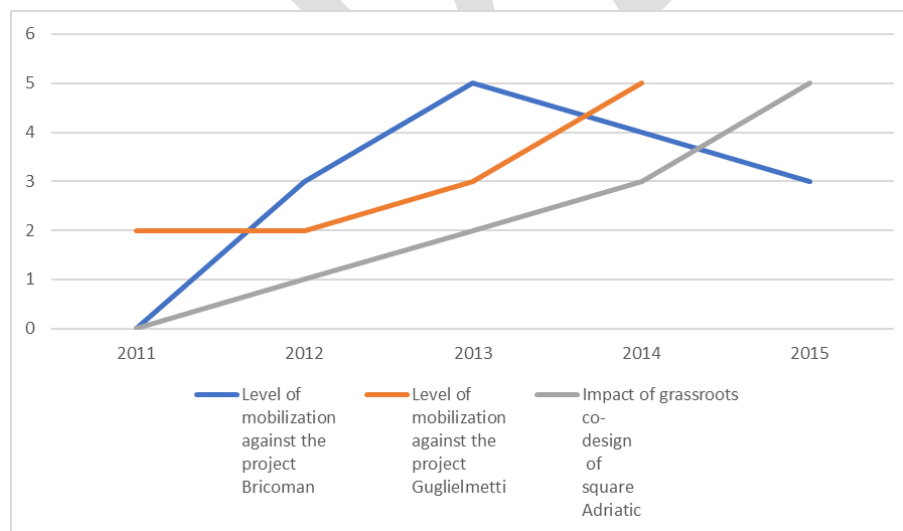


Figure 6.4.3: Patterns at niche level

The causal process concerning the niche can be understood starting from three interrelated processes. The first is the birth and development of the niche. The second is the development, by the niche, of a line of reasoning on the possible transformations of the conception of the city, both concerning its human and non-human inhabitants and concerning the cultural heritage, to water and the mountain. The third is the

political mobilisation against the regime's opposing policies. The second process had to contend with the imperviousness of the regime to these new proposals – both in its business-related variants and in those related to representative institutions. The second saw both successes and failures as outputs.

As far as the birth and affirmation of the niche is concerned, two processes must be analysed: the one that led to the development of different CAIs in the neighbourhood (following the 2011 flood) and the one that led to the foundation of the Associazione Amici di Ponte Carrega, i.e. the niche (which does not coincide with the collective actions in the area, but emerges from and relates to them).

The flood showed the delays and inefficiency of the state apparatus in reacting and responding to the crisis. In several areas, and particularly in the particularly affected Molassano district in Val Bisagno, the population had to mobilise independently to deal with the flooding and damage. This mobilisation has provoked waves of solidarity but also anger against the institutions and questions about the prospects for risk mitigation. Several CAIs have been created, or existing CAIs (neighbourhood recreational clubs, political associations) have dedicated part of their energy to solving this kind of problem.

The niche originated in this climate between 2011 and 2012, and the trigger for its formal constitution as an association (and its political mobilisation) was the policies announced by the Municipality of Genoa in 2012 for the mitigation of flood risk. These policies involve an increase in the impermeable surface of the soil, with more concreting (increase in the number of vehicle lanes) and a narrowing of the riverbed. These policies, completely irrational concerning the problem to be solved, are accompanied by the decision to demolish several bridges over the river, including the 18th-century Ponte Carrega, which are considered elements draining the water flow and potential risk vectors.

A significant number of citizens who, in the Ponte Carrega district of the Molassana neighbourhood, contributed to post-flood social solidarity and/or were affected by the flood, see this plan as problematic. What should be protected, the cultural heritage, is sacrificed to make way for urban policies that increase the risk. The Associazione Amici di Ponte Carrega (Friends of Ponte Carrega Association) has therefore been set up to oppose this plan and imagine a different relationship between citizens, the territory, the urban framework, cultural heritage and the environment.

Starting from the constitution of the niche, the latter develops two different but interconnected mobilisation directions, which produce two different causal processes and have a different impact on the regime.

The first concerns the imagination of a different type of city and a different relationship between city and politics. It proposes the participation of citizens in political decisions and the development of solutions starting from the citizens and the territories. The niche is not limited to affirming this necessity, but also tries to put it into practice by promoting initiatives for the acculturation of the association and the residents of Molassana and Genoa on topics such as hydrogeological instability, prevention of instability, eco-sustainability of the city, and the relationship between hydraulic engineering, natural environment and urban planning. This led to various specific proposals that, on the whole, were ignored or rejected by the political institutions, both local (municipality of the middle Val Bisagno) and city (municipality of Genoa). This was although some municipal technicians had shown interest in the innovative ideas proposed by the niche and by professionals and academics who had supported or inspired them.

The second concerns political mobilisation, including demonstrations or lobbying activities, against the municipality's projects with the greatest environmental impact in the neighbourhood (and which are

considered to be a risk for hydro-urban instability). There are essentially three main battles, two negative and one positive. These are the battles against the redevelopment plan for the banks and the bed of the Bisagno river; against the construction of the Brico and Guglielmetti commercial complexes by Coop, which would have increased the non-draining surface area through further concreting of the neighbourhood; and for the redevelopment of Piazza Adriatico, severely affected by the 2011 flood.

The impact on the regime is fluctuating.

In relation to the intervention plan on the Bisagno river, the new municipal administration has renounced both the demolition of the Carrega Bridge and the narrowing of the riverbed by increasing the number of vehicle lanes on the left bank of the river.

Concerning the property development projects, the niche achieved the cancellation of the Guglielmetti project, also through collaboration with a local architects' studio that produced an alternative project for the area, aimed at showing the problematic nature of the project presented by the Coop. This initiative had the effect of convincing the majority of the parties and town councillors to vote against the project. The niche, on the other hand, lost the battle against Bricoman, which was built by excavating the mountain and further waterproofing the surrounding soil, with a consequent increase in the risk of flooding. The project involves urbanisation costs for Coop, which had to secure the Rio Mermi, a tributary of the Bisagno, with its labour and projects, but with public capital allocated by the Municipality. The niche organisation monitored the construction of this work and expressed reservations about the way it was carried out, as well as about the real impact on the safety of the territory.

The work to make the Mermi stream safe produced a surplus and a sum of capital left over. The niche group put pressure on the local council to invest these funds in the neighbourhood, particularly for the redevelopment of Piazza Adriatico. In fact, since the mobilisation in 2011 after the flood, la nicchia and other community centres in the neighbourhood had put project proposals in writing to redevelop and make the square safer, which is below the level of the river water a few dozen metres away (hence the impact of the flood in the area). The niche obtained the allocation of residual funds from the Mermi river and, in 2021, the allocation of Next Generation EU funds (NRRP) for this participatory project, which led to the redevelopment of the square. Although the final project is not exactly what the niche wanted, some elements are the result of its proposals, such as a slight increase in the portion of surface area built with draining materials.

<https://kumu.io/davidegrasso/he-genova#genoaniche2>

6.4.5 Summary and Conclusion

6.4.5.1 *Origin & Evolution of HE*

The association 'Amici di Ponte Carrega' (Friends of Ponte Carrega) was founded in 2012, a year after the popular mobilisation following the Genoa flood of 2011, formalising the civic and political activation of dozens of citizens of the Ponte Carrega district in the Molassana neighbourhood of Genoa. The neighbourhood and the district are located next to the Bisagno stream, which overflowed in 2011, causing serious damage and several deaths. The CAI volunteers worked with thousands of citizens to provide first aid during the flood. Subsequently, they decided to get together to create a more liveable environment and maintain critical control over the urban planning policies of the Municipality of Genoa, with particular reference to environmental sustainability, hydrogeological remediation, and the protection of the local cultural heritage.



The evolution of the niche can be divided into three phases: (a) structuring; (b) impact on the regime, (c) crisis. In the first phase, the CAI assumes the characteristics of a niche by developing a series of innovative ideas and proposals on the urban planning level, on the conception of urban cultural heritage, on the relationship between the built environment and water, and the relationship between the city and the mountains. In the second phase, it came into conflict with the municipality of Genoa. Moreover, the latter not only failed to consider the broader transformation of the socio-technical regime advocated by the niche—whose proposals had garnered support from scientific communities, professionals, and public authorities—but also implemented redevelopment projects in the Molassana neighbourhood that adhered to conventional Italian and Genoese urban planning paradigms. These interventions were increasingly contested by the niche and various collective actions in the area, particularly in the aftermath of the flood. The niche's efforts—which included lobbying political parties, mobilizing citizens, and engaging technical and scientific experts—led to partial successes but also encountered significant setbacks. In the third and final phase, the niche experienced a specific defeat with the approval and construction of one of the two shopping centres it had actively opposed. More broadly, its proposals for inclusive, participatory governance and a reorientation of the urban planning model were rejected by the dominant socio-political regime. This period also saw a broader political shift: following the public protests that erupted after the 2014 flood, the existing regime lost ground, and a centre-right administration—arguably even less receptive to the niche's vision—was elected, marking a further distancing from the transformative agenda it had advocated. The window of opportunity closed with an unfavourable outcome for the attempt at socio-political and socio-technical transition proposed by the association. Its activities continue today, with less participation from residents and focusing on opposition to new infrastructure projects with a high environmental impact planned along the Bisagno river.

6.4.5.2 *Organization & Activities of HE*

The association operates through a members' assembly and is governed by a statute. It provides for the election of a president, the regulation of activities, and the allocation of funds, even in the event of dissolution. The statute also defines the objectives of the CAI. The CAI regularly liaises with other CAIs, starting from the Molassana neighbourhood where the main interlocutors are the Residents' Committee of Piazza Adriatico, the ARCI Club of Piazza Adriatico and the Documentation Centre of Piazza Adriatico.

Initially, the CAI's activities were characterised by two main lines of action: mobilising the square to ensure the safety of the neighbourhood after the flood and organising public cultural events conceived as self-training of citizens on the issues of environmental protection and urban development. Through this dual activity, the CAI managed to become a point of reference and a centre of attraction for many CAIs that were pursuing similar or compatible objectives at a city level. This central role probably emerged due to the CAI's activity in the socio-technical dimension alongside the socio-political one. The association's members have developed skills in the fields of environmental sustainability, building design and urban planning regulations, although their professions do not always align with these areas of expertise.

After the 2012 elections, which, also due to the flood, brought a new centre-left political group to power, the CAI had to deal with the political impermeability of the latter, which had raised expectations regarding mechanisms for citizen participation and attention to environmental issues. On the contrary, the city council authorised the construction of a large commercial complex near the river, confirming the urbanisation charges that consist of making the Mermi stream safe, as it flows right behind the houses of the CAI members. The mayor also promoted the construction of a second complex designed by the same cooperative, the Coop, next to the Ponte Carrega district. Between 2012 and 2015, the CAI dedicated itself

to opposing these projects and fighting for the safety of the streams and the river and the eco-sustainable redevelopment of Piazza Adriatico.

After the conclusion of this phase of struggle, which led to a mixture of successes and failures, the CAI has continued to carry out initiatives, from 2015 to the present day, in the field of protecting the cultural heritage of Ponte Carrega and, together with other CAIs, has obtained European funds for the redevelopment of Piazza Adriatico. Together with many associations and political groups, it is fighting against the construction of an elevated underground railway line along the Bisagno river, as part of the No Sky Metro Committee.

6.4.5.3 *Goals & intended Outcomes of HE*

The association's objectives, as outlined in its statute, primarily emphasize the promotion of supportive social relationships and values with significant political relevance. Secondly, there are references to the specifics of neighbourhood life, to the use of urban spaces, and to the promotion of environmentally friendly urban policies (art. 3):

- The spread of solidarity in human relationships and between peoples;
- To fight against any system that involves the exploitation of humans by humans, any form of dictatorship, and any type of bad government in general that creates social inequality and does not respect civil human rights;
- To fight against any form of authoritarianism, whether overt, covert, or disguised;
- To provide information, news, facts, and publications (which tend to be omitted or at least treated superficially by the official press) to the attention of society and those around us. And to counter-inform by providing points of view that differ from the dominant thinking that wants us to be conformists and ignorant of what is happening in our streets;
- Social promotion and the cultural and civil development of its members and society as a whole;
- The practice of defending civil, individual, and collective liberties;
- Promoting the aggregation of subjects interested in the purchase and sale of organic and artisanal products from the surrounding area, promoting lifestyles that allow the reactivation of a productive fabric without intermediaries;
- Promote the redevelopment and reappropriation of disused spaces and areas so that they are returned to social life with projects such as collective and urban vegetable gardens.

The aims of the CAI and the tools to achieve them are listed in art. 4 of the statute. Here are a few:

- To create a free and independent radio on the web or via radio waves managed by the members with the aim of broadcasting programmes, music, and information that mainly promote a culture of solidarity and self-management.
- To organise exhibitions, conferences, and debates, promoting and managing competitions of ideas in the cultural and social sphere.
- Promoting and managing cultural and entertainment activities, parties, work camps, and holiday camps aimed at social subjects at risk (minors, migrants, adolescents, disadvantaged subjects, etc.);

- Promoting and managing film festivals, video projections, concerts, or other initiatives of a social and cultural nature;
- To present proposals to organisations and public administrations, to draw up conventions, memoranda of understanding or other types of agreement and to request contributions to participate actively in decentralised forms of land management;
- To create an archive, a library, and a toy library for the association.
- To promote cultural tourism initiatives in Italy and abroad;
- To promote initiatives aimed at safeguarding the environment.

These goals translate into a diverse set of intended outcomes across social, political, ecological and territorial domains, particularly reflected by the following:

- Foster a culture of mutual support and non-hierarchical collaboration within and beyond the local community.
- Strengthen civil society by defending individual and collective rights, and promoting grassroots civic participation.
- Create spaces for counter-information, political debate and participation
- Promote environmental awareness and action through the regeneration and collective reappropriation of disused urban spaces.
- Support local economies and sustainable consumption by encouraging short food supply chains and organic, artisanal products.
- Advocate for participatory urban policies and decentralised forms of land management through direct engagement with public institutions.
- Develop proposals and formal agreements with local administrations to influence urban planning, environmental protection, and social service provision.
- Establish shared knowledge infrastructures (e.g., archives, libraries, toy libraries) to promote informal education and cultural inclusion.

These outcomes collectively aim to strengthen the capacity of communities to self-organize, reclaim autonomy over resources and spaces while managing and reshaping urban areas according to ecological and justice principles.

6.4.5.4 *A multilevel perspective on the CAI using the MLP visualization*

In the case of Genoa, the landscape impacts on the process of (lack of) innovation above all through the flooding that has affected the city. They are caused by (a) the heavy rainfall in the region in a short period of time; (b) the geographical position of the city, built on a narrow strip of land between the mountains and the sea; (c) the chaotic urban planning model that emerged with the industrialisation and then de-industrialisation of the city.

None of these factors is entirely independent of human influence. Both (b) and (c) are direct outcomes of socio-institutional decisions, while (a), though partly driven by natural dynamics, is increasingly linked to human-induced climate change (IPCC, 2023). Therefore, while we classify these elements as part of the

landscape level, it is important to recognize that the distinction between the landscape and regime levels is one of degree rather than kind. The case of the Genoa floods, as interpreted by HE, highlights how the socio-political landscape functions as a deeply embedded and persistent layer of the regime—resistant to change and difficult to influence through short-term interventions

If we consider that the niche's political reflections on urban policies in Genoa were intended to have an impact on the dynamics referable to (c), we can better understand the failure of this attempt, with the socio-political regime proving impervious to change in its mentality and strategies. The regime here should be understood both as a complex of local and national representative institutions, and as a complex of local or national companies linked to specific socio-technical cultures.

The development of the niche must be traced over a long period of time. The great flood of 1970 is a precedent that many interviewees recalled. While not universally accepted, many associate the solidarity displayed during the flood relief efforts with a distinct Genoese "spirit," "tradition," or "culture," often regarded as a meaningful element of local identity. It is no coincidence that the press produced a narrative linked to the expression 'Mud Angels' was born in 1970.

The participation of the time also emerged from a social fabric strongly linked to industrialisation and consequent urbanisation, often influenced by democratic, socialist and communist ideologies. The logistical focal point for the relief efforts after the 2011 and 2014 floods in the Marassi neighbourhood was the Bianchini Communist political club, founded as the Firpo club in the 1960s. In 2011, many individuals from secular and progressive backgrounds came together, independently of direct coordination with state institutions—including the military—unlike their Catholic counterparts, such as parishes and scout groups

Piazza Adriatico, in Molassana, also has a working-class history, often linked to the history of the Communist Party (remembered ambivalently in the neighbourhood, for example by anarchist activists). The actors linked to the niche are not only aware of this history, but also attribute to this cultural heritage a resistance that is supportive and participatory, as well as critical, in Genoa and in particular in their neighbourhood. The niche developed in opposition to mainstream politics, which inherits the history of the communist party (the democratic party and an economic initiative close to it, the Coop), managed the flood and its aftermath. This shows that the niche refers to a communist, democratic or socialist cultural heritage that goes far beyond the party-institution that formally collects its legacy, enhancing its popular and social side.

One element that emerged in several interviews is also the impact on the development of the niche of the ecological struggles carried out in Piedmont, in the Val di Susa (Turin), by the movement that has been opposing the new high-capacity Turin-Lyon railway line since the 1990s (No Tav Movement). Many young Genoese people who helped to shovel the mud in 2011 had spent a good part of the summer in the Susa Valley, where the conflict was at the time escalating. They had therefore participated in a social movement that had both strongly opposed a government policy and built its strength on the sharing of knowledge about the project and its impact through strategic cooperation with actors from the professional and academic world.

All these factors can be considered useful elements in tracing the socio-political background of the emergence of post-flood CAIs and, above all, of the CAI that has shown itself capable of acting as a niche for the incubation of innovative ideas to mitigate hydrogeological and urban planning risk.

The window of opportunity, anticipated in 2008 by a government appeal to the Municipality of Genoa to secure the Rio Ferreggiano, opened with the first flood. The niche has a relative impact on the regime, modifying some local policies, avoiding some interventions with an environmental impact on the territory, obtaining the partial redevelopment and securing of Piazza Adriatico and the Mermi stream. It also manages to involve some of the technical staff of the Municipality in the initiatives of reflection and public discussion on the flood risk together with professional and academic staff.

Overall, however, the regime is not willing to change its urban planning mentality. One of the interviewees belonging to the socio-political regime (member of the municipality of the middle Val Bisagno) expressed the view that the alternative measures proposed by the niche, such as mountain water retention, river daylighting, and the expansion of urban green spaces, were nothing more than unrealistic "utopias".

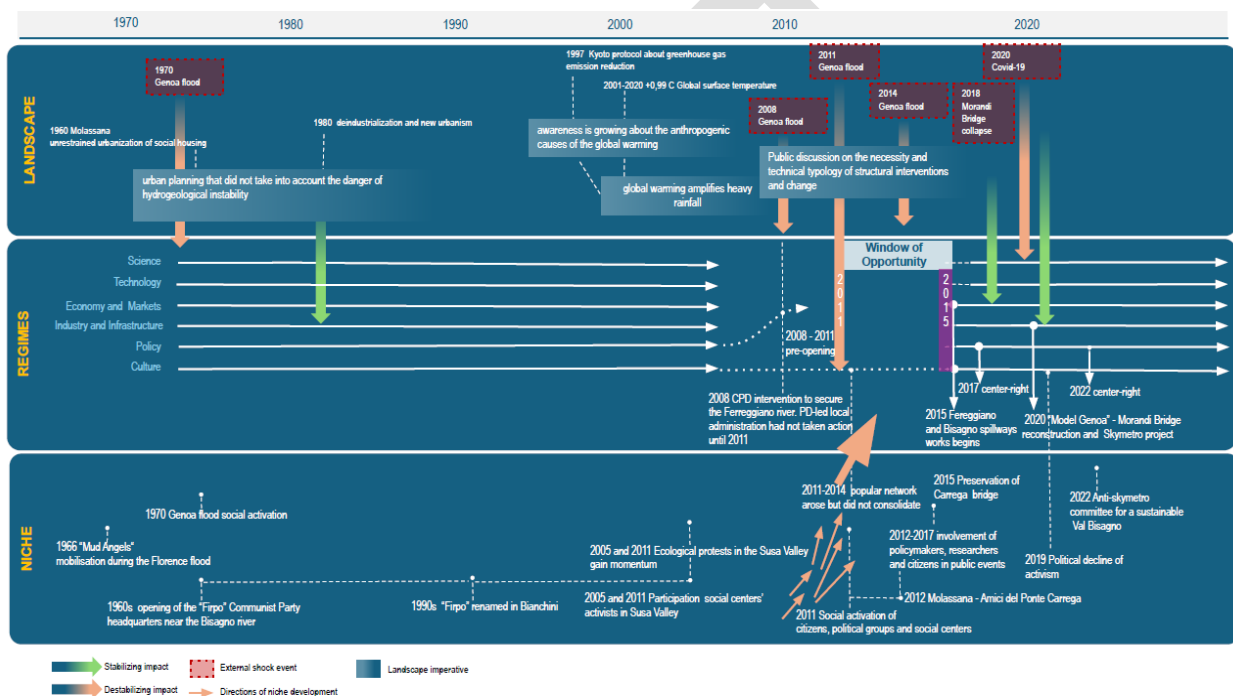


Figure 6.4.4: Multilevel perspective on the CAI using the MLP visualization

The 2017 election results have definitively closed the window of opportunity. The Genoese electorate has in fact chosen a centre-right team that bases its vision of the city on land consumption, even in derogation of current regulations (the so-called 'Genoa model' linked to the construction of the Morandi bridge). An example of this is the Sky-Metro project, a high-impact project that would extend along the right and left banks of the Bisagno. The No-SkyMetro committee, which includes activists, citizens and academic staff, has been set up to oppose it. The niche is currently an integral part of the committee.

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7. HISTORIC EXAMPLES OF FORMAL POLITICAL PARTICIPATION

7.1 Vienna Climate Team, participatory budgeting (AT)

7.1.1 Interviews

7.1.1.1 Documentation of application of the method

The qualitative interviews followed a semi-structured interview guide which was adapted to the context of the interview partners beforehand, to be able to focus on each interview partner's specific perspective and expertise. Interviews were conducted between September 2024 and March 2025, with durations between ~60-90 minutes, and an in-person format was preferred wherever possible. In addition to the three interviews conducted specifically for the purpose of this report, transcripts from seven more interviews from a master thesis on the subject of the Vienna Climate Teams (VCT) were included in the analysis (Trattner 2025). An overview of the characteristics of each interview is shown in table 7.1.1.

Table 7.1.1: List of interviews

Code	Interviewee (position or function)	Date	Duration	Format
<i>Interviews conducted in the framework of the Cosustain project</i>				
VCT01	Initiator A of the CAI, climate perspective	19.9.2024	72 min	in-person
VCT02	Initiator B + head of Executive Group for Construction and Technology + one employee of Executive Group for Construction and Technology	6.2.2025	60 min	in-person
VCT03	Initiator B of the CAI, participation perspective	13.3.2025	62 min	in-person
<i>Additional interviews from the master thesis (Trattner 2025)</i>				
VCT04	Participating citizen, project development phase	8.8.2024	61 min	in-person
VCT05	Participating citizen, citizens' jury	20.10.2024	58 min	in-person
VCT06	Council member of a participating district	29.8.2024	63 min	in-person
VCT07	Head of council of a participating district	25.9.2024	24 min	in-person
VCT08	Two administrative staff members (Municipal Department 42 – Parks and Gardens)	8.10.2024	60 min	in-person
VCT09	Administrative staff member (Municipal Department 49 – Climate, Forestry and Agriculture)	30.9.2024	56 min	in-person
VCT10	Administrative staff member (Municipal Department 18 – Urban Development and Planning)	8.11.2024	60 min	online

7.1.1.2 Results

Description and objective of the CAI



The initiative Vienna Climate Teams is a governance and participation innovation implementing a participatory climate budget³ for the city of Vienna, whereby Viennese inhabitants co-create climate mitigation and adaptation measures together with experts and stakeholders from the city administration. During each year-long project cycle, three Viennese districts participate in the budgeting process, which consists of five steps: (1) idea submission, (2) initial idea assessment, (3) co-development of project ideas by citizens, experts and administrative staff, (4) project selection by representative citizens' jury, (5) implementation of selected projects by the responsible city or district departments within two years. The concept development for the initiative took place in 2020-2021, when the city of Vienna participated in the program "Deep Demonstrations" initiated by the European Institute of Technology's Climate Knowledge and Innovation Community (EIT Climate-KIC). The goal of this program was to support the development of several projects that could act as test beds for systems innovations to tackle climate change.

Taking a longer-term perspective, the initiative arose from the efforts of the city government in the late 2000s and early 2010s to strategically anchor participation and citizen involvement in the city's governance and administrative goals: "Yes, I think you have to go back to the red-green city government we had at the time, with [the] deputy mayor, who was very committed to strategically anchoring participation in the city" (VCT03, pos. 10). In the early 2010s, a position was created in the city of Vienna's Executive Group for Construction and Technology to advance this goal of increasing citizen participation in urban planning. Milestones during this period of increasing political commitment to citizen participation include the city of Vienna's "Handbook Participation in Urban Development", which was published in 2012, as well as the inclusion of the topic in its 2014 "Smart City Strategy" and the 2017 "Master Plan Participatory Urban Development". These important policy documents paved the way for Vienna's participation in the "Deep Demonstrations" program, where the discourse around citizen participation came into contact with the topics of climate change mitigation and adaptation, which at the time were very present in the public discourse due to the emergence of the Fridays For Future movement in 2018 and 2019. With support from Democratic Society, an international non-profit organization with expertise in citizen participation and governance innovation, a concept for a participatory climate budget was developed. After the municipal elections in the fall of 2020, the project idea received political support from the newly appointed city councillor for climate, environment, democracy and personnel and was included in the coalition agreement of the new city government. Ultimately, this political support was key to the municipal council's decision, in early 2022, to approve the implementation of VCT for a two-year pilot phase, allocating a budget of 13 million euros for the first two years.

The initiative is built on a vision that "[...] all the people in Vienna who live in the district can help shape it. On the one hand through ideas, but also through decisions. To implement bolder climate protection projects. This also strengthens courageous politics and provides a tailwind. And to make the whole issue, which is often so abstract, much more tangible and more related to the reality of our own lives. And another reason is definitely also a kind of depolarization through collaboration" (VCT01, pos. 31). From the perspective of climate change mitigation and adaptation, increased citizen participation is thus expected to lead to more effective climate action and generate public support for policy measures, as well as create a culture of understanding and collaboration among the participating citizens. At the same time, VCT was conceptualized as an innovation on the level of Vienna's governance structures

³ For information on the format of participatory budgeting and its development, see e.g. Bartocci et al. (2023).

and administrative processes. Another central aim of the initiative was thus to achieve topic-related cooperation within different departments of the city administration, covering, for example, housing, digitalization and urban development: “So that means you can, so to speak, discuss and work on topics across all Executive Groups. And in that respect, it's kind of clever to have this kind of framework, because it has somehow made it possible to play out these topics in different contexts for the first time, i.e. participation in the housing sector, participation in digitalization, participation in urban development” (VCT03, pos. 10). During the development of the budgeting process, a key challenge was fostering this collaboration between different administrative departments, but also between political, administrative and civil society actors: “How can we manage to work on projects and ideas between the administration, politicians and civil society?” (VCT03, pos. 20). To this end, many stakeholders from the city administration, the participating districts for the first project cycle, and organizations with expertise on citizen participation were included in the concept development phase, to ensure a good fit between the new participatory format and existing governance structures and processes. This diligent preparation and focus on the inclusion of different perspectives at the early stage of concept development is considered a key success factor by the CAI's representatives: “[...] we are now in the third cycle and nothing has fundamentally changed in the concept as we developed it that year, because we simply listened very carefully to the partners at a very early stage about what they actually need” (VCT03, pos. 22).

VCT's two-year pilot phase ended in 2023, and the initiative was granted further financing (8.5 million euros for 2024-2025) with only minor adaptations to the participatory budgeting process based on insights from the accompanying evaluation. While the initiative has been quite well-received overall, the interviews also shed light on some of its ongoing challenges. First, the facilitation of effective collaboration between citizens and administrative staff remains a major task for VCT's team, as knowledge transfer between administrative staff members is limited and the development of a “participatory mindset” among a majority of the staff takes time. Second, there is a need to manage expectations regarding the number of projects that can be implemented in the framework of the process. While a great number (>1000) of ideas are submitted during the first phase, only a few dozen projects can be implemented in the end, which has led to some critical feedback and reflections among the CAI's team on how to communicate these aspects of the process more effectively. Finally, the biggest challenges concern the implementation phase of the budgeting process. Some project ideas turn out to require more time or effort than anticipated during the participatory budgeting process and thus cannot be completed during the foreseen two-year implementation phase, while others demand complex collaborations between different administrative departments which can be difficult to navigate. Administrative departments have their own long-term planning in terms of projects and budgets, which can be difficult to reconcile with VCT's aspirations of fast project implementation: “[...] the municipal authorities have long budget procurement processes and then there is a work program and everything is planned in advance [...]. The climate team has now come up with a very ambitious timeline, namely that implementation should be completed in 2 years, [...] in urban development we actually have long-term 10-year cycles, so if I plan something now, I will see it in 10 years at the earliest” (VCT10, pos. 3). Another challenge can arise when political conditions change or evaluations of feasibility conducted during the budgeting process do not hold up to scrutiny during more detailed planning, as it has been the case for a superblock (“Supergrätzl”) project which is still pending implementation: “The political framework conditions or assessments have simply changed to a certain extent, so to speak, which then led us to say, yes, Supergrätzl, we really haven't got that far yet. We still need more information to be able to implement Supergrätzl properly. And that's why, somehow, these projects can't be launched in the form that was

perhaps developed at this point in time” (VCT03, pos. 42). Addressing these challenges may require further adaptations in the participatory budgeting process, management of expectations on the side of both citizens and political and administrative stakeholders, as well as time to allow for (institutional) learning and awareness building among citizens, political and administrative actors.

Relation to issue of sustainability and climate change

As the initiative’s objective is the co-creation of climate mitigation and adaptation measures for the city of Vienna, sustainability and climate change issues have played a central role from the beginning. The CAI’s initiators believed that a participatory format could lend legitimacy to more ambitious policy measures: “My theory is that the citizens are much braver and would like a lot more, but the politicians are afraid that there are a few citizens who are against it and then they dare not implement things. And that [the CAI], I thought, is a way of bringing more of what citizens really want to the surface” (VCT01, pos. 21). At the same time, the participatory budgeting process is criticized by some stakeholders for not necessarily always producing the most effective projects or measures with regard to climate mitigation and adaptation. For example, a large proportion of the ideas submitted by citizens are projects to redevelop public spaces, which are very relevant for people’s daily lives, but not necessarily the biggest levers for mitigating negative climate effects. Additionally, when compared to the overall investments that need to be made for climate action, the initiative’s budget is, of course, limited.

Nevertheless, the CAI contributes directly to the city’s climate goals in small ways, as well as playing a central role in raising public awareness about climate change and necessary measures to face it: “And at the same time, of course, it’s also a huge awareness-raising project, because it gets citizens thinking about what climate protection is, what climate change is” (VCT01, pos. 21). This impact is considered essential by the CAI’s promoters, even though it requires taking a long-term perspective and can be difficult to measure. Additionally, the initiative contributes to regime-level changes of attitudes towards citizen participation, as administrative staff and institutions experience the participatory budgeting process and appreciate the value of citizens’ ideas and local knowledge.

Niche characteristics

The introduction of the concept of a participatory climate budget in Vienna was only possible due to the shielding function of the “Deep Demonstrations” program the city participated in, as the free space this project provided was essential to the initiative’s growth: “[...] this Deep Demonstration program was really fantastic because it was so free. In other words, I could simply divide up my time and we were able to experiment and put so many hours into simply developing the concept without it having to be decided beforehand that we would do it. So that doesn’t normally happen, that it starts in such a way that it doesn’t need a decision yet and we can still work on it. And that, in the worst-case scenario, it could also fail” (VCT01, pos. 23). Additionally, the initiative offers citizens the opportunity to try out new projects and come up with innovative ideas for climate mitigation and adaptation measures. At the same time, it strengthens the participants’ ability to act by involving them in local decision-making and implementation processes and thus also contributes to empowerment.

Despite its niche role, after the first two project cycles, the CAI has already become more mainstream in the city’s administration as administrative staff gain more experience with the format and institutional learning takes place. While the participatory approach does require additional effort, it is satisfying for the

staff to engage with citizens and improve their understanding of what is needed locally: “Well, we've already noticed that we've become a bit more mainstream with our project [...]. Most people say it's a lot of work. And it's additional work to what we already do. [...] But we really enjoy coming to you because we simply find a good framework there. [...] And we actually have the opportunity there to get into conversation with the Viennese and simply ensure understanding, to explain our own work a bit, but also to better understand the local needs” (VCT03, pos. 28).

7.1.2 Textual Analysis

7.1.2.1 *Documentation of application of the method*

The corpus for the in-depth textual analysis encompasses 21 texts, covering both inside perspectives on the CAI as well as (media) reporting and evaluations of its activities from an outside perspective. The material from the CAI itself consists of reports and presentations at different stages during its development, therefore allowing an analysis of how its activities and organization evolved over time. Furthermore, several short media articles (in the format of press releases) written by members of the CAI provide additional insights into how the initiative presents itself to the public. A more balanced analysis of the media coverage was achieved by also adding several articles to the corpus which were written by journalists who are independent from the CAI's activities. Further outside perspectives on the initiative are provided by the reports on its evaluation process. In terms of scientific literature, to date only a few articles have been published about the Vienna Climate Team (VCT). While these publications were consulted throughout the analysis (and are cited accordingly in this report), it was decided not to include them in the in-depth textual analysis in order to be able to focus more strongly on perspectives from the niche itself and the broader public.

Qualitative content analysis of the texts was conducted in MAXQDA 24.7.0 and encompasses 50 codes, integrating analytical dimensions and categories from all methodological approaches to ensure that no relevant information was missed. Further to the results outlined below, the textual analysis provided information on the CAI's stakeholder network and relationships with key actors as well as on system dynamics and niche-regime-interactions, which will be discussed in the methods' respective sections.

7.1.2.2 *Results*

Meta-data

The present voices of the CAI primarily include politicians and the initiative's representatives, members of the organization team, media representatives, and occasionally participating citizens and stakeholders. However, several voices are missing from the conversation, including those from multipliers, and some of the stakeholders and public authorities involved in the participatory budgeting process.

The texts are predominantly directed toward the general public, but often lack clear, direct addressees. The sources of the texts include publications directly from the City of Vienna or stakeholders involved with the Vienna Climate Team as well as media articles. The texts are in German and English, addressing audiences at the national and European levels.

Manifest content

The CAI's core objectives are centered around the thematic fields of participation, governance, climate change mitigation and adaptation, and social justice and community building. While these topics are consistently referenced in the CAI's texts, the focus of its narratives has evolved over the course of its

development. During the initial phase of idea development and conceptualization, the CAI's team emphasized systemic change and innovation, urging large-scale solutions. These narratives were in keeping with the focus of EIT Climate-KIC's "Deep Demonstrations" program, which provided the framework for the development of the initiative. After the decision had been made to focus on the development of a participatory climate budget in Vienna, the emphasis of the texts shifted to exploring the participatory budgeting format and the topic of community involvement for a good climate in the city. With the start of the CAI's two-year pilot phase in 2022, texts increasingly emphasized the impacts of the climate crisis for all citizens and the role of local knowledge in facing these impacts, to aid in the mobilization of citizens to participate in the budgeting process. The CAI was framed as a governance innovation aimed at 'breaking new ground' in the areas of citizen participation and activation. After the first two project cycles, texts focused on the initiative's first successes in mobilizing citizens to participate in the co-creation of climate measures, as well as its model role for new governance processes in Vienna. Starting in 2024, after the initiative's continuation had been decided, the narratives expanded to include other democratic and participatory innovations happening in Vienna at the time (e.g. the development of the Vienna Democracy Strategy), which were framed to be closely related to VCT's successful implementation and a direct continuation of the city's commitment to increasing participatory modes of governance.

Throughout the years, the term "Grätzl" (= parts of residential districts in Vienna) has remained central, reflecting the community-driven local approach and identification with the neighborhood.

Similarly to these shifts of the narrative focal points, the issues addressed in the CAI's texts developed and adapted over the years, although the overarching themes of climate protection, governance innovation and social justice always remained present. During the CAI's initial development phase, the emphasis was placed on issues of tackling climate change through radical transformations and government innovation. With the start of the pilot phase in 2022, the texts focused on different dimensions of the necessary transformations, addressing issues of sustainable mobility, renewable energy and climate-friendly urban spaces as well as socio-economic factors. In 2023 and 2024, as the CAI became more established as an innovative format of participatory governance, it began to broaden its focus again to include more general issues of democracy, participation and the collaborative shaping of socio-ecological transformations and climate-just urban planning processes.

Regarding the CAI's activities, it organized numerous events to foster citizen participation and stakeholder engagement. These included a variety of workshops where residents, institutions, and other stakeholders collaborated on climate initiatives. Additionally, action weeks held in public spaces created opportunities for direct interaction, raising awareness and encouraging collective climate action within the community. In this context, local multipliers were highlighted as important stakeholders.

The texts also highlight the relevance of several developments at the policy regime and landscape level. At the European level, this includes the EIT Climate-KIC's mission to support European cities to achieve carbon neutrality by 2030 and the New Green Deal. At the city level, Vienna's Smart Climate City Strategy and the Vienna Climate Roadmap were highlighted. Further governance innovations that have followed in the wake of the CAI's development and successful first project cycles include the Vienna Democracy Strategy and the establishment of the Office for Participation to further institutionalize citizen participation approaches. Furthermore, in 2024/2025, Vienna was elected European Capital of Democracy.

Particularly important stakeholders since the start and throughout the process of the CAI have been all relevant municipal departments (e.g. Urban Development and Planning (MA18), Architecture and Urban Design (MA19), Parks and Gardens (MA42). Additionally, local multipliers such as Lokale Agenda 21 (a Viennese NGO working in the field of citizen participation), local associations, and public service providers (e.g. GB* urban renewal city area management) were essential for engaging citizens on-site. Research stakeholders were particularly significant for evaluating the process, while professionals with expertise in the area of participatory process planning and facilitation played a key role in specific parts of the workshops and procedures. For the CAI, local and district politicians were also essential.

Latent content

Mostly politicians and team members from the city departments speak directly in the texts. Politicians consistently present a convincing and positive attitude toward the project, whereas some representatives from the administration also express criticism of certain processes. In contrast, participating citizens mainly have the opportunity to voice their opinions within the scope of the evaluation reports.

The call to action is seldom mentioned, and when it is, it remains largely unchanged throughout the years. Similarly, the overall goal and vision of the CAI stay consistent over time, with little variation in their formulation.

The pilot years of the CAI have led to the initiative being pursued further, meaning that funding will also be available. Special events such as the designation of the city as the Capital of Democracy have helped to strengthen and continue the initiative. The connection to climate protection or the broader field of climate action has persisted over the years.

7.1.3 Social Network Analysis

7.1.3.1 *Documentation of application of the method*

The social network analysis is based on the stakeholder analysis documented in Deliverable 1.2. In a first step, the information collected there on the CAI's key stakeholders (type, power, interest, impact) was transferred to a kumu.io project to support visualization. For the second step, additional information was collected through the textual analysis and interviews (see sections 7.1.1 and 7.1.2) focusing on the stakeholders' role in the context of the initiative, their resources to influence the policy process, and the MLP level they can be assigned to.

A full list of stakeholders, their characteristics and key relationships between them can be found in the appendix (section 9).

7.1.3.2 *Results*

The results of the social network mapping for Vienna Climate Team are shown in figure 7.1.1.

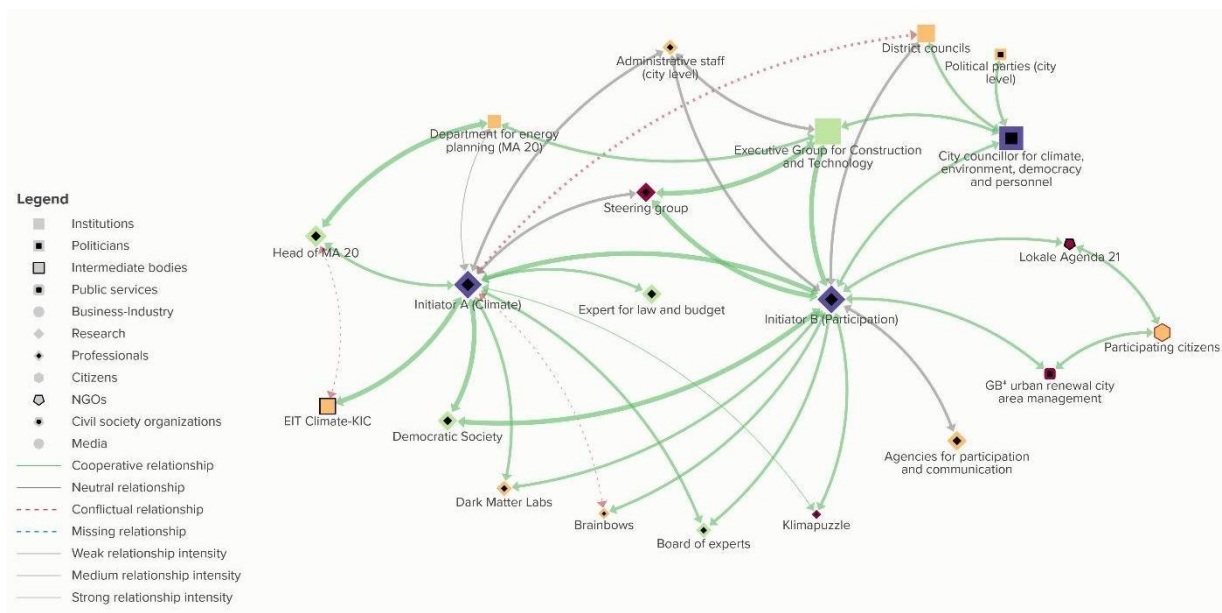


Figure 7.1.1: Social network mapping for Vienna Climate Team

Niche level

The CAI's social network is centered around the two most influential niche actors, initiator A (climate) (SH1) and initiator B (participation) (SH2). Together with Democratic Society (SH8), an international non-profit organization working on projects relating to democracy, these three actors had a very high impact on the development of Vienna Climate Teams and were highly involved in the design process, bringing important normative, relational and knowledge resources. Other, less influential niche actors include additional consultancies who were involved in the concept development due to their knowledge resources (Dark Matter Labs (SH9) and Brainbows (SH18)) and a Viennese NGO with practical experience in citizen participation who shared its expertise during the development phase (Lokale Agenda 21 (SH14)). During the implementation phase of the participatory budgeting process, further niche actors became involved: Several agencies for participation and communication (SH15) support the CAI's regular staff throughout the participatory process, which gives them a medium amount of power and influence over the practical implementation of the process. The initiative "Klimapuzzle" (climate puzzle, SH11) plays a small, but consistent role, as the game is used during the final phase of the budgeting process, the citizens' jury, to give the participating citizens an overview of important climate-related information before they vote on the projects to be implemented.

Finally, the participating citizens themselves (SH21) can be considered niche actors within the frame of the CAI. Their role and influence are ambivalent: Although they had little to no influence over the conceptualization and design phase of VCT's process, they are obviously central to its implementation, as they contribute their knowledge of the city and their district to the development of climate mitigation and adaptation measures. Citizens had the opportunity to contribute their experiences and expectations regarding the process design during the two pilot years of the project, which was accompanied by a scientific evaluation of the process and its impacts.

Regime level

As VCT is an example of formal, top-down initiated political participation, the initiating niche actors were deeply embedded in several regime level institutions, which played a key role in the initiative's development. For initiator A (SH1), this included the department for energy planning (SH3) and its department head (SH4), who played a moderate but important role in the process, as they held mainly positional resources in the organizational structure of Vienna's governance system. A key actor from the science regime was the European Institute of Innovation & Technology's Climate Knowledge Innovation Community (EIT Climate-KIC) (SH10), who initiated and financed the "Deep Demonstrations" project during which the idea and concept for VCT were developed. Initiator B (SH2) was more strongly connected to Vienna's administrative and policy regime, being employed at the Executive Group for Construction and Technology (SH5) and having prior connections to the city's administrative staff (SH12) of different departments, who, despite having only a medium amount of power and influence over the process design, are deeply impacted by it. The administrative staff's involvement continues to be central to the successful implementation of the participatory budgeting process, as they hold important positional and knowledge resources. Vienna's city administration was also included in the concept development phase of VCT through the Steering Group (SH16), which consisted of the heads of several city administration departments as well as the head of the Executive Group for Construction and Technology (SH5). Although the Steering Group held fewer normative resources to actively influence the design of the participatory budgeting process, the group's support was nevertheless important due to the positional resources of its members. Similarly to the role of important actors from Vienna's city administration, the city councillor for climate, environment, democracy and personnel (SH6) was a key figure in the initiative's success. His high interest in the project brought important political support, ensured financing and access to other positional and relational resources.

Less powerful regime actors regarding the initiative's development include the board of experts (SH17), the GB* urban renewal city area management (SH13) who provided practical experience with citizen participation in Vienna, and an expert for law and budget (SH20) who accompanied the concept development. The district councils (SH7) of the participating districts are involved in the implementation of the budgeting process, and the political parties (SH19) of Vienna's municipal council agreed to fund the project but had no normative influence on its design.

Niche-regime interactions

The most important interactions occurred between the project's initiators (SH1 and SH2) and the regime level institutions they were embedded in at the time (SH3, SH4 and SH5). These connections, as well as the collaboration with the heads of city administration through the Steering Group (SH16), helped bring the initiative into the regime and supported negotiations between niche and regime actors to improve the project's fit with existing (administrative) regime structures, which was central to its successful implementation. Another key relationship was SH1's connection to the science regime actor EIT Climate-KIC (SH10) who provided essential funding, expertise and international connections for the idea and concept development. Political support for the project could be garnered from the cooperative relationship between SH2 and Vienna's city councillor (SH6), which in turn eased interactions with other important regime level stakeholders such as the administrative staff (SH12) and the district councils (SH7).

7.1.4 System Mapping

7.1.4.1 Documentation of application of the method

The majority of the information for the system mapping of both the niche and the regime dynamics was collected through TA (7.1.1) and interviews (7.1.2). The interviews, in particular, provided a comprehensive picture of the dynamics surrounding the initiative, since interviews could be conducted with actors who were both key figures in the development of the niche initiative as well as holding longstanding experience and regime-level roles in the city of Vienna's administration regarding urban planning and citizen participation (VCT02 and VCT03).

To begin the system mapping process, the dynamics on both the regime and the niche level were described in a narrative form based on the insights from document and interview analysis. Following this, some of the key dynamics were further explored through additional data sources where necessary (and available), and the most important variables involved in the dynamics were identified, with graphs illustrating their development over time.

Since VCT is an example for a formal political process of citizen participation, the niche and regime levels are very strongly interconnected, and many actors can be considered to belong to both levels (see section 7.1.3). Similarly, the system dynamics observed in this case mostly concern both levels, and therefore only one system map was created, exploring the interconnected dynamics of both the CAI as a niche initiative as well as its embeddedness in the political and cultural regime.

7.1.4.2 Results

Regime level

Regime level issue that led to niche development(s):

The city of Vienna has to implement further climate mitigation and adaptation measures to reach its goal of climate neutrality by 2040 (Magistrat der Stadt Wien 2022), but these measures frequently face public resistance.

Due to migration and voting rights focusing on citizenship, the percentage of Viennese inhabitants who are not allowed to vote in city elections has been increasing, thus leading to a democratic deficit.

Pattern(s) of key factor(s) at regime level:

Pattern A: Vienna's greenhouse gas (GHG) emissions

Figure 7.1.2 shows the development of Vienna's GHG emissions since 2005, as well as the projected pathway to reach the goal of climate neutrality by 2040. Although there is a downward trend of total emissions, to reach this goal it is necessary to increase the rate of reduction significantly. To this end, the city of Vienna has committed itself to implementing climate mitigation and adaptation measures in many different sectors, with a specific focus on the reduction of fossil fuels in mobility and heating, as well as contributing to the decarbonization of Austria's electricity production (MA20 2022). The successful implementation of these measures, however, is dependent on public support and acceptance of climate action among the inhabitants of Vienna, as public resistance to climate policies can significantly delay or even hinder meaningful political action. The inclusion of citizens in the development and implementation of climate policies is recognized by the city's policy regime, as is evident e.g. by the goals regarding increased citizen participation laid out in the Vienna Smart Climate City Strategy (Magistrat der Stadt Wien

2022).

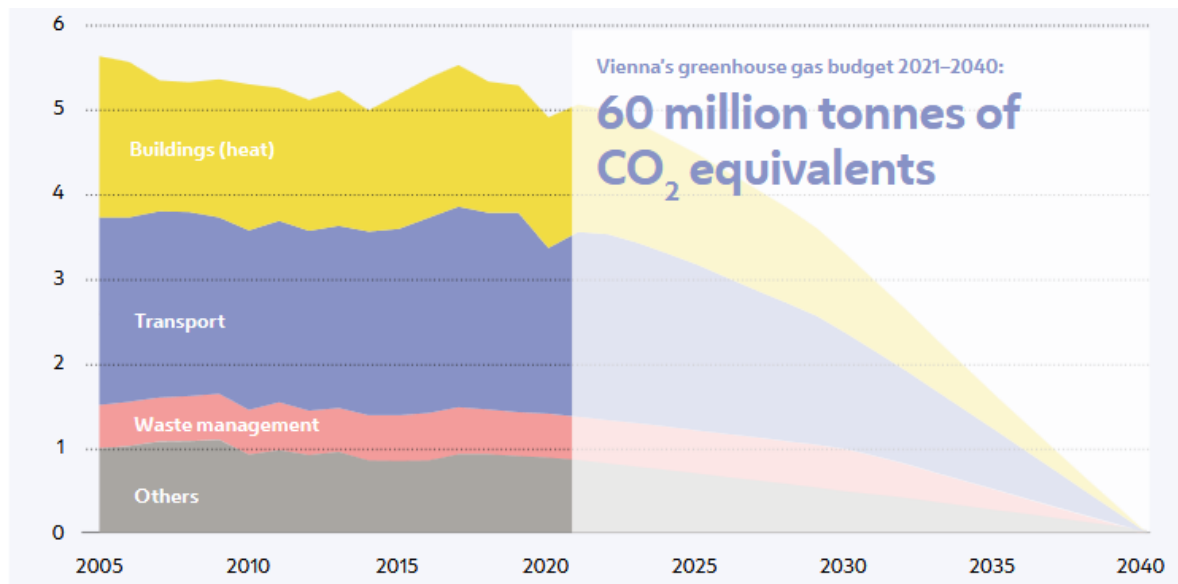


Figure 7.1.2: Pathway of Vienna's GHG emissions (in million tons of CO₂ equivalents) to the 2040 target (Source: Vienna Climate Guide, MA20 2022)

Pattern B: Public awareness and support for climate action

As a proxy for this variable, figure 7.1.3 shows the results of Statistic Austria's microcensus on environmental conditions and environmental behavior from the years 2007, 2011, 2015 and 2019. In all four census years, the item "greenhouse gas effect, climate change" ranked as the most urgent environmental problem, but there is a noticeable decrease from 2007 to 2011. One possible reason for this is a shift of public focus away from the topic of climate action due to the global financial crisis of 2008 and its consequences over the following years. A marked increase in 2019 can likely be attributed to the rise of the Fridays for Future movement during this time, as indicated by one of the interview partners (VCT01). Although there is no data yet on the further development of this variable, it is likely that public awareness and support for climate action have decreased again over the past five years, since landscape events such as the Covid-19 health crisis and the Russo-Ukrainian war have once again shifted public awareness away from the topic.

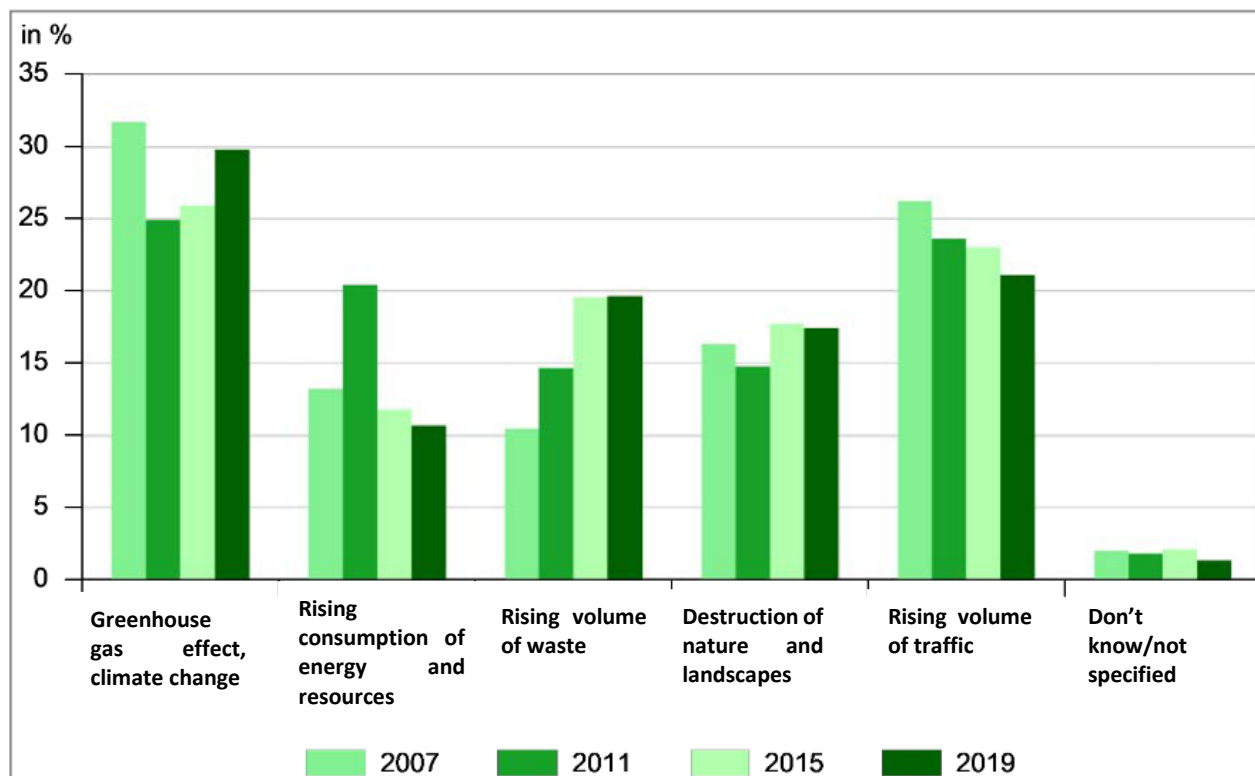


Figure 7.1.3: Most urgent environmental problem, comparison microcensus 2007/2011/2015/2019 (Source: Statistik Austria 2020)

Niche level

Initiative goal:

The initiative intended to create a participatory climate budget for Vienna to increase citizen participation in policy making for climate action, co-develop climate mitigation and adaptation measures for the city and foster public knowledge and awareness of climate action.

Pattern(s) of key factor(s) at niche level

Pattern A: Political commitment to citizen participation

A deciding factor for the successful implementation of Vienna Climate Team was the steady rise in political commitment to citizen participation in the years prior to the establishment of the initiative (see Ahn and Mocca 2021). Figure 7.1.4 shows an approximation of this development over time. Important developments on the policy regime are indicated in the MLP visualization in figure 7.1.6 (see section 7.1.5). Interview partners ascribe the steady rise in political commitment to paradigm shifts in urban planning and general (landscape level) trends towards more citizen participation (VCT02, VCT03). Prior to the establishment of VCT, there had also been projects implementing a participatory budget at the level of individual districts (see Ahn et al. 2023).

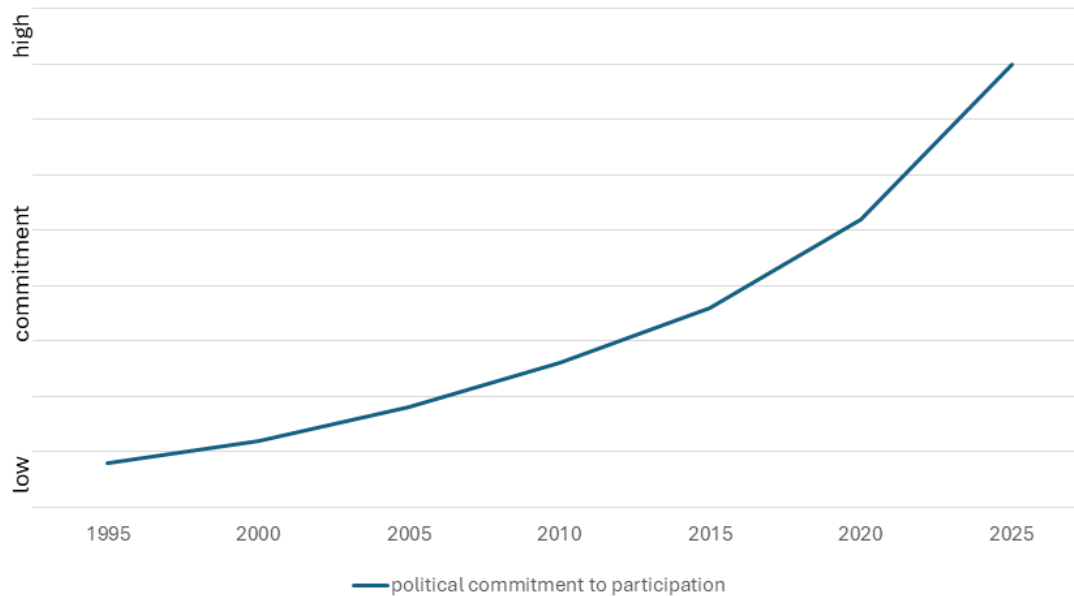


Figure 7.1.4: Development of political commitment to citizen participation in Vienna, 1995-2025 (source: own analysis of regime level developments)

Dynamics at niche and regime level

Figure 7.1.5 shows the CLD of the interconnected niche and regime level dynamics for this CAI. At the center of the system is a balancing feedback loop between implemented measures for climate action in Vienna and public resistance to these measures (B1). This dynamic feeds into the second key balancing loop: As public resistance to climate action increases, fear of public backlash about measures in the political and administrative regime increases, and thus climate action decreases (B2).

To resolve the dilemma of a clear need for climate action while facing public resistance to climate measures, the fear of public backlash can increase political commitment to citizen participation in decision making, as participation assures to increase the quality and legitimacy of decisions as well as empower citizens. As politicians and administrative staff recognize the democratic deficit that is created by a lack of representation of citizens' views and needs in political decision-making, they become more inclined to support participative formats for developing climate policies. The climate mitigation and adaptation measures co-created in such participatory settings can decrease public resistance to climate action, as can the increase in public knowledge about the necessity of climate measures due to increased participation. The implementation of such co-created measures then leads to a reduction of a lack of legitimacy in the field of climate policy.

While these dynamics appear to resolve the dilemma of climate action and public resistance, the CLD shows that they create additional balancing loops, meaning that the system would be at risk of falling back to its previous behavior: As public resistance to climate action and the democratic deficit decrease, the incentive for promoting citizen participation in the political and administrative regime falls away (B3, B4, B5), and there is a risk that participatory formats will decrease again, as they are costly in terms of time and resources. However, an increase in citizen participation also creates several reinforcing loops that can potentially counteract these balancing dynamics. First, increased citizen participation can increase public

support for participatory formats, which will in turn increase political commitment to participation (R1). Second, as the city's administrative staff gain knowledge about participatory processes, resistance to participation among the administrative regime is decreased, which allows for more and higher-quality participatory formats (R2). Finally, resistance among the city administration is directly connected to political commitment to participation, meaning that a decrease in resistance will further increase political commitment, which will in turn decrease administrative resistance (R3). Therefore, niche initiatives such as Vienna Climate Teams can kickstart a “virtuous cycle” of participation by directly increasing opportunities for citizens to get involved in policy making for climate action, thus increasing public knowledge and support for both climate mitigation and adaptation measures and further citizen participation, which can in turn create more support in the political and administrative regime.

CLD of niche and regime level dynamics

Link to CLD in kumu: <https://kumu.io/janap/cosustain-sm-vct#sm-niche-regime>

Alternative link: <https://embed.kumu.io/25f1f9cbcb6161e9a689749d9ca22d98>

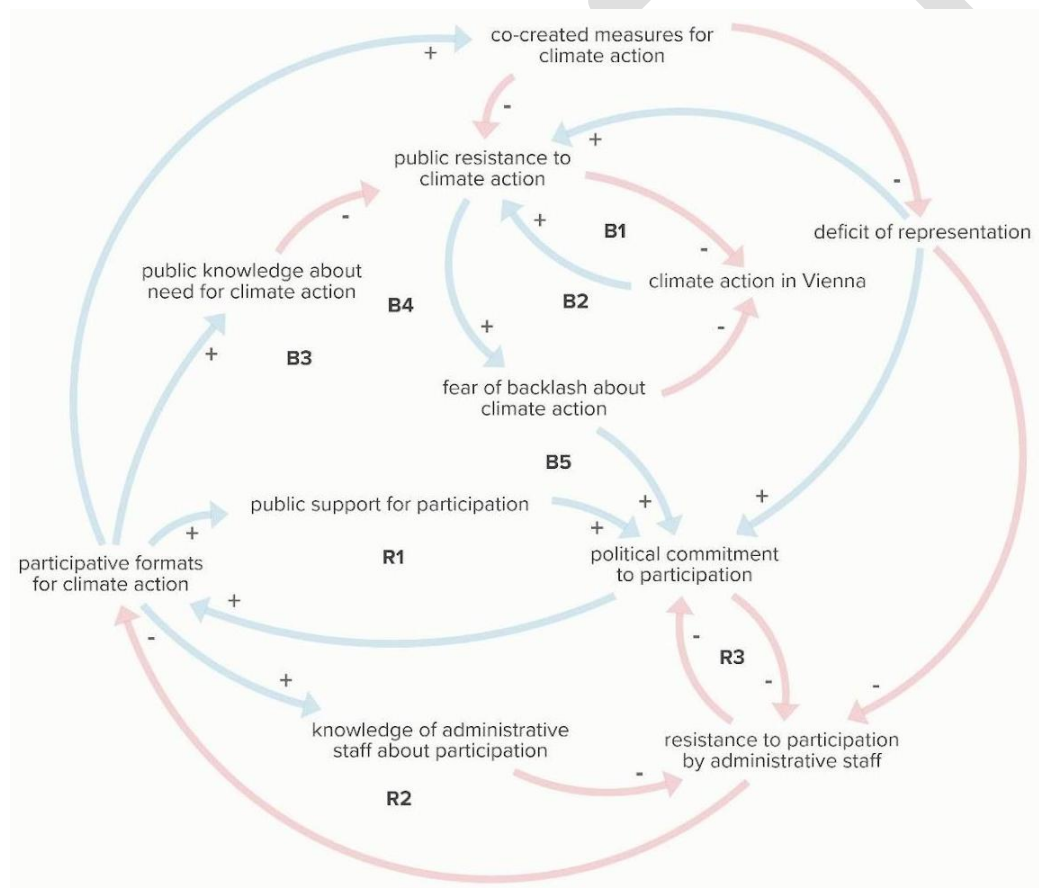


Figure 7.1.5: CLD of niche and regime level system dynamics

Feedback loops:

B1: climate action in Vienna →+ public resistance to climate action →-

B2: climate action in Vienna →+ public resistance to climate action →+ fear of backlash about climate action →-

B3: fear of backlash about climate action →+ political commitment to participation →+ participative formats for climate action →+ co-created measures for climate action →- public resistance to climate action →+

B4: political commitment to participation →+ participative formats for climate action →+ co-created measures for climate action →- deficit of representation →+

B5: participative formats for climate action →+ co-created measures for climate action →- deficit of representation →- resistance to participation by administrative staff →-

R1: participative formats for climate action →+ public support for participation →+ political commitment to participation →+

R2: participative formats for climate action →+ knowledge of administrative staff about participation →- resistance to participation by administrative staff →-

R3: resistance to participation by administrative staff →- political commitment to participation →-

7.1.5 Summary and Conclusion

7.1.5.1 Origin & Evolution of HE

The concept for the Vienna Climate Team emerged in 2020, when the City of Vienna took part in the “Deep Demonstrations” initiative led by the Climate Knowledge and Innovation Community (Climate-KIC) of the European Institute of Technology (EIT). In collaboration with the international non-profit organization Democratic Society, the city began shaping an initial idea for a participatory budgeting initiative. This was grounded in preliminary research, including expert interviews and case studies examining existing participatory budgeting practices in Vienna on a district level. Working with partners from the EIT Climate-KIC network, an early version of the concept was formulated and brought into discussions during the 2020 post-election negotiations between the Social Democratic Party (SPÖ) and NEOS – The New Austria and Liberal Forum. As a result, the proposal was included in the new municipal coalition agreement. In 2021, a more detailed implementation strategy was co-developed with city stakeholders. This process included five stakeholder workshops and the formation of a board of experts made up of researchers, civil society representatives, and multipliers, who contributed with feedback and additional perspectives. In January 2022, the Vienna municipal council officially approved the initiative, allocating an annual budget of 6.5 million euros for a two-year pilot phase. During the pilot phase, a total of 53 project ideas across six Viennese districts were chosen by citizens’ juries for implementation. After a scientific evaluation of the process and some adaptations, VCT has received further financing and has now entered into its third project cycle.

7.1.5.2 Organization & Activities of HE

Each year-long project cycle is structured into five distinct phases. In the first phase, residents of Vienna are invited to submit their ideas for the participating districts, based on seven criteria: (i) a positive impact on the climate, (ii) contribution to social justice and community cohesion, (iii) feasibility within two years, (iv) compliance with public law, (v) alignment with the City of Vienna’s goals and plans, (vi) potential for continued operation, and (vii) falling within the city’s administrative responsibilities. In the second phase, submitted ideas are evaluated by public administration experts for their viability and effectiveness.



Ideas that meet the criteria move on to the third phase, where they are further developed through project and neighborhood workshops, which are supported by city administrations' staff and other experts. The fourth phase introduces Citizens' Juries: in each district, a randomly selected, representative group of residents reviews the developed ideas and determines which ones should move forward, based on the available budget. In the final phase, the selected projects are implemented by the appropriate city or district departments.

7.1.5.3 Goals & intended Outcomes of HE

The goals of the initiative address the perceived regime level challenges regarding both the need for further climate mitigation and adaptation measures in the city of Vienna, as well as problems of legitimacy of political action that has been developing over the years. To address these issues, VCT aims to co-create climate mitigation and adaptation measures together with the inhabitants of Vienna. In the participatory budgeting process citizens' local knowledge can be included and the citizens can choose which projects should be implemented, thus empowering citizens and improving public acceptance. At the same time, the CAI aims to increase public knowledge on climate action and raise awareness, as this can also decrease public resistance to climate policy.

With regard to the city's administrative processes, the initiative intends to increase knowledge about participatory processes among administrative staff, integrate citizen participation more effectively into the city's existing governance structures and test innovative forms of governance and participation (Amann et al. 2025).

7.1.5.4 A multilevel perspective on the CAI using the MLP visualization

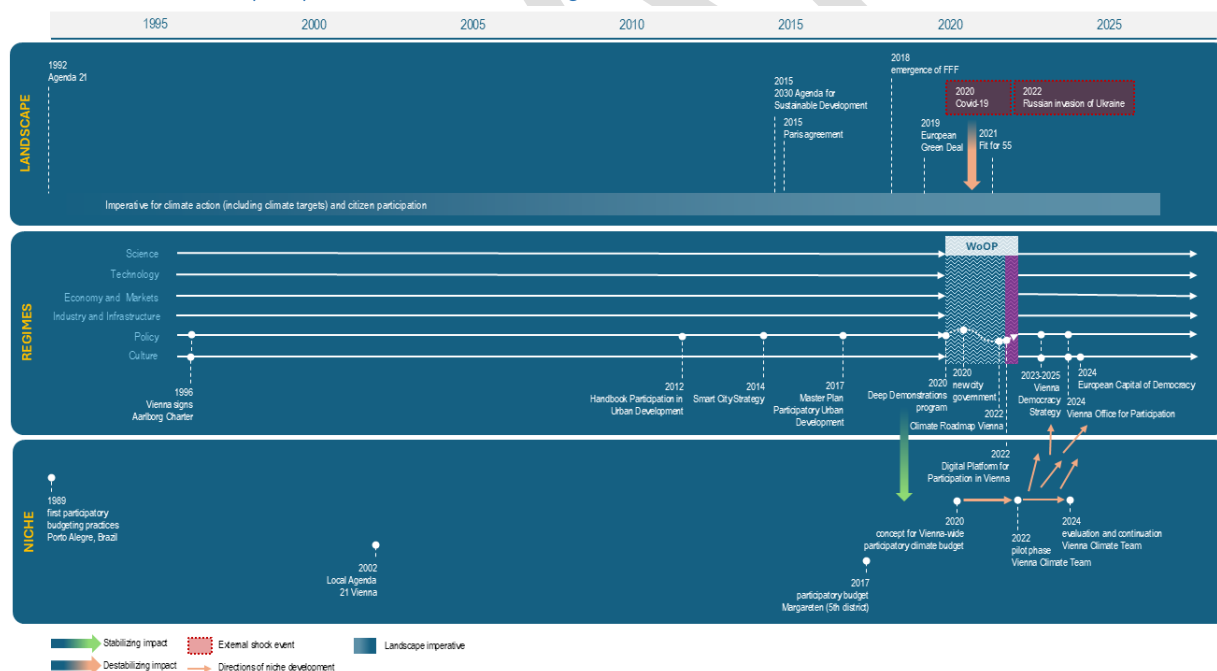


Figure 7.1.6: MLP visualization for Vienna Climate Team

7.1.6 References

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7.2 EYES Granollers – Youth Climate Group

7.2.1 Interviews

7.2.1.1 Documentation of application of the method

The EYES initiative started in 2019. The project was conducted in six different cities in the following countries: Spain, Denmark, Italy, France, and Bulgaria. The initiative studied in this document is the one from Granollers, Spain. To further analyze the initiative four interviews were conducted.

Table 7.2.1: List of interviews

Code	Country	City	Date	Duration	Format	Investigated CAI	Function of interviewee in the CAI
P01	Spain	Granollers	28/05/2024	1h	Online	Granollers City Council	Expert with knowledge in Granollers City Council, partner of the project.
P02	Spain	Granollers	23/12/2024	45 min	Online	Granollers City Council	Technician in Granollers City Council.
P03	Spain	Granollers	10/01/2025	1h	Online	Participant	Participant of EYES, member of the Youth Intervention Groups.
P04	Spain	Barcelona	31/01/2025	1h	Online	Ecoserveis	Expert with knowledge from Ecoserveis, partner of the project.

7.2.1.2 Results

Description and objective of the CAI

EYES was conceived as an opportunity to bring youth and local public administration closer in the field of energy and climate change. The purpose of the project was to empower young generations, especially those between 18 and 29 years of age, to take an active role in the local decision-making on climate change (UBBSLA, 2025). Therefore, the project was focused on generational justice in the environmental field and included vulnerable communities as active agents for change in local planning.

“EYES project managed to create agents for change and helped to raise awareness” Interviewee P04

The project was organized through a top-down approach, led by Granollers city council. On one side, there was the Advisory Board (AB), formed by experts, who taught participants to gain skills and knowledge on local participation processes, climate action, communication and soft skills, local energy plans like the Sustainable Energy and Climate Action Plan (SECAP), etc. On the other side, the young volunteers who received the training were grouped into working groups. They were the main beneficiaries of the project, who managed to write and present policy recommendations to the city mayor.

The initiative finished in 2021, highly impacted by COVID-19, which hindered certain outcomes like the realization of a final event. A project called CLIMATUBERS was born after 2021 as a direct result of EYES, even including some of the actors that participated in EYES.

Relation to the issue of sustainability and climate change

The following quote is very illustrative of the relation between EYES and the issue of sustainability and climate change:

“Sustainability is the main goal; it is the central theme. Everything works around it: ecological and climate sustainability, especially from the perspective of youth participation (...) ensuring they have a role and a voice” *Interviewee P03*

In fact, all interviewees have agreed on this matter, the spotlight that was put on sustainability and climate change. The objective was clear: to instruct young people in climate issues and local climate planning with the objective to empower young generations to get involved in local decision making. The objective was to make Granollers more resilient in terms of climate change consequences by involving all young citizens, including vulnerable ones, aiming towards climate justice and inclusiveness. In this regard, young people living in neighbourhoods more exposed to social and climate risks and with fewer resources to cope with the impacts were considered in a situation of vulnerability.

Therefore, the project had a direct influence on sustainability and climate change. In fact, the SECAP document was one of the main documents that the experts used to teach young people about local climate policy, so they could understand what their city was implementing in this field. SECAP was one of the main motivations to introduce the EYES project in Granollers, highlighting the need to make young people familiar with the document, as the main step to empower younger generations in climate action.

EYES' sustainability contribution, apart from empowering youth in local environmental planning and climate justice, was the elaboration of environmental policy recommendations.

Participants, thanks to the implemented methodology, managed to elaborate policy recommendations focused on actions that the city should enforce to fight climate change sustainably. These were the main results for the project implementation over two years. Granollers mayor received EYES participants and listened to their climate petitions, although many of the actions proposed were already included in the SECAP that the city is executing.

Niche characteristics

Granollers is a city that has demonstrated a rich and vibrant social fabric over the years. Citizens tend to join many local initiatives (social-related, environmental) leading to the creation of civil society organizations in the city (Ajuntament de Granollers, 2024). Some of these organizations are youth-focused, for instance the Roots Forum, committed to tackle environmental concerns and local action in the city for those aged between 12 and 16. In this sense, EYES was the perfect initiative to be implemented in Granollers, because there already was a fertile ground for a project like this to be successful.

EYES project managed to empower youth to advocate for a just and healthy future. With proper dedication and knowledge, participants were happy to learn about climate and sustainability, becoming active agents for change. It is important to remind young people to fight for their rights, also regarding climate issues,

and highlight the power of political participation processes as a valuable means to achieve change. As it was stated:

“Youth groups created a structure of influence that existed temporarily, and in this sense, EYES was very valuable” *Interviewee P04*

Climate justice was a remarkable objective in the project. EYES wanted to involve vulnerable collectives in local decision planning, because climate change affects everyone, and the primary goal was to adopt an inclusive approach during the overall implementation. The project, following the rich social fabric that Granollers has, managed to have young people committed to join forces for a sustainable future, having a special impact on each young person that participated, both by raising awareness on climate change effects and by creating a sense of community, strengthening collective values and providing nurturing. The impact was bigger for those participating than general citizens, who did not have the opportunity to see the impact on the long term.

“EYES was totally focused on ecologic and climate sustainability from youth participation, giving them an active role and a voice through participation processes, brainstorming, etc (...), but the project had a more meaningful impact on the personal level (at least for me) rather than the overall citizen. EYES managed to open many doors, but on the team level, it did not have a lot of impact. This is, in part, due to COVID-19 pandemic, because some actions that would have helped like the fair, could not happen” *Interviewee P03*

It cannot be underestimated the negative impact that COVID-19 had during the last months of the project. It had a particularly severe impact on the final event, as it had to be cancelled. This situation hindered the networking opportunities across Europe, where young people would have thrived.

In summary, the EYES project, despite having a top-down approach, was an opportunity to provide shielding to young people who were concerned about climate change and local planning. It provided a space for them to learn and become key stakeholders for advocating in local climate policy, having a direct influence on which direction local decision-making could take (Törnberg, 2018). At the same time, the initiative promoted empowerment during the two years of action. It was a fit and conform type of empowerment, according to Törnberg, because alongside the political power (the City Council), it developed a framework to involve youth in climate action with the aim to root into mainstream society the necessity to tackle climate crisis in the local scene, involving younger generations as powerful agents.

7.2.2 Textual Analysis

7.2.2.1 Documentation of application of the method

For the realization of the textual analysis, a text corpus was compiled as the main step to understand how the initiative was portrayed, considering all types of documents and texts that were relevant to frame the EYES project. There were different types of articles and documents considered, mainly those about the CAI, but also some from the CAI. A total of **20** texts were studied:

- 2 about the initiative
- 3 from the initiative
- 5 relevant for the regime context
- 2 about related laws
- 4 relevant for the landscape context

4 about general information

From these texts, **8** were considered significant to be further studied in the textual analysis, considering meta-data, manifest content and latent content.

7.2.2.2 Results

Meta-data

EYES was a European project with 5 pilots, one of them located in Granollers. There were different types of stakeholders involved. Youth, including those in a situation of vulnerability, were the main actors in the project and were grouped into Youth Intervention Groups (YIT). They were supported by the AB, a group of experts offering mentorship, and by Granollers municipality departments. A local policymaker and key experts also contributed to the project.

There are not many media articles available due to the fact EYES Granollers is a local project and only some local media outlets reported on this. Young people were the most represented voices because they were the main stakeholders in the project. Their role as key agents of change placed them at the center of media coverage, highlighting their importance in driving climate action (Som Granollers, 2019). In turn, Granollers city council was prominent but not dominant, shown as an active promoter of the project in the city.

The media outlets that published articles were Granollers newspaper, online magazines from Barcelona provincial council, different sources from Granollers city council and their own project sources.

The spotlight was consistently placed on young people and local climate policy, not by coincidence, but because these were the key elements of the project and, consequently, received the most media attention. As one interviewee noted:

“When the proposal was drafted, the aim was to ensure that the voices of young people were included in policies. It unfolded a great motivation for European funding to help that the voices of young people influenced climate policies” *Interviewee P04*

Manifest content

EYES was a two-year project, running from 2019 to 2021 in Granollers. During this time, there were relatively few communications about the CAI. Media coverage mostly focused on the work young people were doing in the city, aiming to highlight environmental and climate-related issues by showcasing the role of youth in planning sustainable local climate actions.

Since all CAI activities took place in Granollers, media coverage was primarily local, with some regional presence, leading to a significant impact within the local community, especially in Granollers itself.

There is little difference in terms of topics addressed by sources from within the CAI and those from outside. However, there is a notable imbalance in the volume of content: external sources are limited and tend to be more general and informative, while internal CAI sources are more detailed and explanatory, consistently placing youth at the centre.

Over the course of the EYES project, the themes and actors involved remained consistent. The focus was maintained on two core concepts that underpinned the project: youth empowerment and local climate action to address the climate crisis. The call to action was always driven by YIT, composed of young participants, as reflected in the CAI blog and videos.

Latent content

Power relations remained balanced throughout the duration of the project. All stakeholders were engaged in a positive and collaborative way, particularly members of the YIT and the AB. Several members had very active roles during the implementation of EYES, especially in discussions around sustainability, local climate action, and the integration of sustainable practices into everyday life.

In media coverage, young people and their involvement in the project featured prominently. Their motivation to promote sustainability and fight against climate change was especially evident during ECOfest, the final online event of the project. Young people contributed in various ways: leading sustainable workshops, performing music, attending roundtable discussions, and more. An AB member also participated in ECOfest, sharing with the wider audience the sustainability knowledge she had imparted to the youth during the project.

The event was organized by the Granollers City Council, which also hosted the official video on its digital platform. The video clearly captured the enthusiasm of the young participants, who expressed their happiness in being part of EYES, a project that brought them together as a network of engaged, committed young citizens advocating for a more sustainable future.

Methodological reflections

It was difficult to find media articles directly related to the EYES project. Only a few were published, and these appeared mostly in local or niche media outlets. Some additional articles and videos were analyzed to help contextualize the broader movement, but direct coverage of EYES was limited.

Media outputs tended to explain parts of the process, but none showcased the AB sessions or how young participants managed these activities. Similarly, tangible results of the project were underrepresented, the most visible result was the video that covered the final festival (ECOfest).

Most outputs related to the CAI focused on the early stages of the project and were primarily informative in nature, lacking depth in terms of impact evaluation or detailed documentation of outcomes.

7.2.3 Social Network Analysis

7.2.3.1 *Documentation of application of the method*

During the application of this method, social network analysis helped to identify all relevant stakeholders that were involved in the EYES project, especially at the niche level. The social network analysis was fed with the information gathered from the textual analysis and the interviews conducted.

Especially for EYES, interviews were very relevant because they provided first hand input on how these relationships were: cooperative, conflictual, neutral or missing. It was a good exercise to identify which type of resources these relationships provided: normative, knowledge, relational, positional or economic. Power, interest and attitude were also analysed during the social network analysis, so as to frame detailed relationships within the system.

7.2.3.2 *Results*

All identified actors below make reference to niche network characteristics, despite one expert with knowledge that is located at the regime level.

The main actor in the EYES project is the Youth Intervention Groups (YIT), which are the youth involved in the overall development of the project. They are the beneficiaries of the project and have the leading role in it, so they are the most powerful.

Two other actors very important for the project are the two professionals with knowledge. They took part in the organization of the project. One of them was the bridge between Granollers municipality and the young people, located in the territory, and the other one had a coordinating role inside the project, located in Barcelona. They both were the main point of contact for the young people, as it was highlighted during the interviews. They facilitated the overall communication and had a very cooperative relationship towards the participants. In this case, the second expert with knowledge was located at the regime culture level.

These would be the main three actors alongside the policymaker. The policymaker is important because of the power that represents, having the opportunity to implement or not the policy recommendations that participants presented.

At the same level, another actor is the municipality of Granollers, the departments involved in the project, especially the environmental department, who assured that the project advanced and developed in the right direction, being a cooperative actor.

The Advisory Board (AB) worked to provide knowledge to the YIT, especially regarding climate change, communication, local participation processes, etc. They were meaningful in the sense that they offered valuable knowledge to participants with the aim to raise awareness and awaken their desire to advocate for local change.

In a distant relationship, there are the general citizens, who would have benefited from the actions presented to the policymaker, which were focused on making Granollers more sustainable and adaptative to climate change.

Making reference to the niche maturity, the actors that have the most power and influence are the youth intervention groups, the two professionals with knowledge and the policymaker. This is because they had power and impact inside the project, especially for the actions and decisions. The most cooperative and strong relationship is between the two professionals with knowledge and the youth groups (both ways) because they worked together a lot and were promoters of the project: young people by being the main beneficiaries of the project; and the two professionals by planning and helping during the whole project implementation. They provided strong relational resource flows to participants and this was very well received by them, feeling accompanied along the way.

The youth groups also had a cooperative relationship with the policymaker because they had the opportunity to introduce the final policy recommendations. However, the policymaker, despite receiving them, could not implement most of the recommendations because they were already addressed in the SECAP document.

The AB had a cooperative and moderate relationship with the youth by instructing them in different fields related to climate and environment. But this was just a one-sided relationship. The municipality departments in Granollers had a cooperative and medium relationship with both the AB and the youth groups, because they were an official partner in the EYES project in Granollers. The municipality of

Granollers also had a cooperative and strong relationship with one professional with knowledge (SH7) who was a technician in one of the departments and responsible to conduct the project on their behalf.

General citizens represented a neutral relationship because they had potential to receive the actions that young people proposed if they were implemented but finally, they were not, so there was no fruitful connection with them. Finally, the departments in the municipality have a neutral but strong relationship with the policymaker because they all work in local public administration. In turn, the relationship of the policymaker towards young participants is neutral because the outcome of the proposal was rather neutral and not creating a big outcome for the municipality, as the measures proposed were already included in the SECAP.

The previous information made reference to the niche level. In this CAI, the socio-technical regime that wanted to have an influence was the Granollers City Council, so all the relationships were concentrated in the niche. Therefore, for the regime level, as EYES initiative was very focused on the local level, it is difficult to find actors outside Granollers (niche level), despite the mentioned expert with knowledge. In this case, the relationship with the expert was cooperative, fruitful and strong. There were no regime instabilities, and the project did not have a long-term impact due to the project lifespan and limited resources (once the project was over, resources were over). However, the project managed to achieve the proposed goals within the established timeframe.

Finally, regarding niche-regime interaction, due to what has been explained before, all the power was directed to the niche, because it had a prominent presence for the achievement of the CAI. In this sense, no conflicts or tensions were identified between the levels.

7.2.4 System Mapping

7.2.4.1 *Documentation of application of the method*

The system mapping method has provided another approach to study our historical examples. It was conducted after the textual analysis, the semi-structured interviews and the SNA, which offered valuable input to frame the system mapping method, and, at the same time, it provided another way to understand our historical examples.

7.2.4.2 *Results*

Regime level issue that led to niche development

From 2008 until 2019 there were several movements due to several socio-political issues in Spain that generated overall unrest. Amid this atmosphere, climate change discourses and concerns became mainstream and part of citizens unrest. Meaningful organizations committed to fight climate emergency were born at that time (in Spain and Europe), some of them including youth voices as the spokespersons of climate justice. This situation led to niche development in 2019.

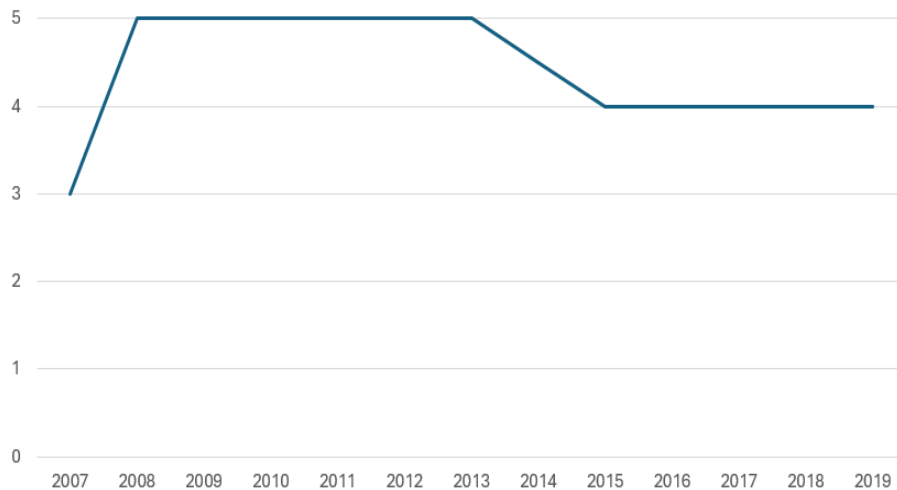


Figure 7.2.1: Pattern 1 Social Unrest (Intensity measured from 0-5)

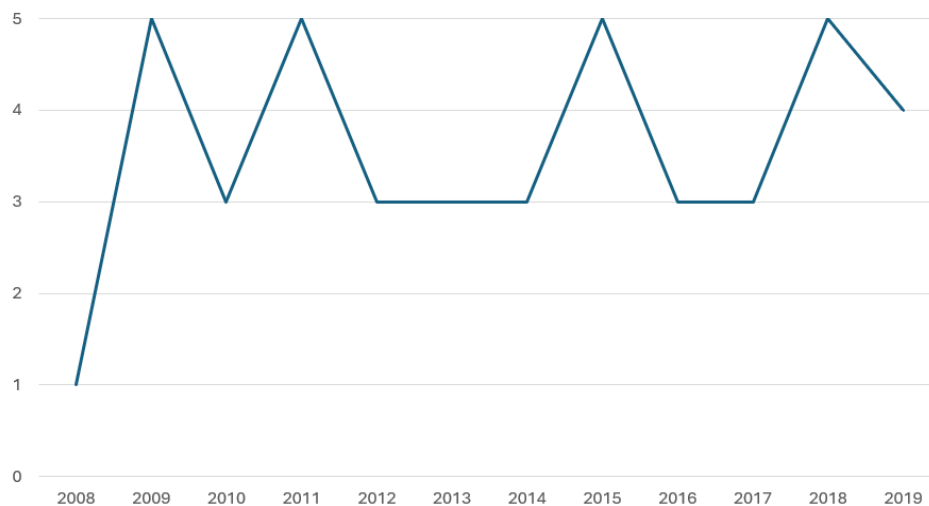


Figure 7.2.2: Pattern 2 Social movements (Intensity measured from 0-5)

The period between 2008 and 2015 in Catalonia was marked by **massive protests due to social unrest**, triggered by the financial crisis that burst in Spain in 2008. What happened in Catalonia was very much in line with the social and environmental protests that were happening all around Spain.

In Catalonia, protests in **2009, 2011 and 2015** were especially relevant, most of them education-related (Garcia, 2017). The objective of education-related protests was fighting for a better education system (especially for universities). Students and activists strongly opposed the unification of university degrees across Europe, arguing that it fostered exclusivity and hindered the inclusion of vulnerable collectives facing challenges in accessing higher education under these new measures. The movements also focused on broader concerns, such as the privatization of education and the increasing necessity of pursuing a master's degree to complement a bachelor's degree, which many viewed as an additional financial and social barrier.

The 2011 movement, known as 15M or the “Indignados” movement, was primarily driven by socio-political issues. People took to the streets to protest against corruption, expressing frustration over the economic crisis and unemployment, issues that directly impacted younger generations in their daily lives, minimizing quality of life (López, 2021). All these protests underscored the strong commitment of Catalan society to self-organization and the defence of their rights.

Amid this situation, climate protests began due to generalized ecological concerns. In 2015 emerged in Catalonia the so called “Climate Justice Network” which gathered entities and organizations all over the territory who wanted to tackle the climate crisis from a local action and justice perspective. According to an expert with knowledge who was interviewed, the Climate Justice Network movement was a meaningful landmark in climate activism in Catalonia (*Interviewee P04*).

In 2018, one year before EYES initiative started, Fridays for Future (FFF) and Extinction Rebellion organizations were born, the first led by a young girl, Greta Thunberg, representing youth voices united for a common climate fight. Fridays for Future managed to gather high school students in organized mass protests, putting young people at the forefront of the climate movement like no other. The movement highlighted that younger generations will be the ones facing the most devastating consequences of climate inaction, raising the concept of “climate justice” (Fridays for Future, 2024).

These movements were part of the social unrest that Spanish and Catalan societies were living at the time, positioning climate discomfort alongside social and political unrest.

Archetypes for pattern 1 and 2

Escalation

These protests could be related to an escalation archetype, particularly the “Indignados” movement of 2015, which had a significant and lasting impact on Catalonia and Spain. Notably, the political party “Podemos” emerged from this movement, aiming to address the needs of young people and those most directly affected by the economic crisis.

The movements that unfolded in Catalonia were the culmination of a period marked by widespread discomfort and calls for change. Economic crises, social challenges, political distrust, and cuts to the welfare system created a heavy burden on citizens. Among them, young people were especially affected, as they faced the greatest challenges in navigating a system struggling to adapt to their needs and aspirations (this reinforced the growing movements in Catalonia and Spain, because of how the national government was managing the overall affairs).

Climate and environmental protests also gained prominence in this time of social unrest. In a few years many climate activism organizations were born, all fruit of a widespread anger with how the climate crisis was trivialised in political agendas. In 2015, Climate Justice Network emerged, followed by Fridays for Future (FFF) and Extinction Rebellion in 2018. These movements quickly became a powerful voice, demanding governments to take meaningful strategies to mitigate climate change and protect the planet, especially for the sake of future generations.

Limits to growth

Some climate-related initiatives like Fridays for Future or Climate Justice Network can be also included in the limits to success archetype.



For instance, when FFF began, it had a significant impact, mobilizing youth worldwide, starting in Sweden. Every Friday, students across the globe participated in strikes, demanding government action on climate change. The movement grew rapidly, but eventually, it reached a turning point where its momentum declined, not disappearing entirely, but losing influence in some areas. Several reasons could have contributed to this loss of engagement, for instance, Covid-19 restrictive measures that hindered the possibility to gather (Siebler et al., 2023). Once measures were lifted, young people started to mobilize again, although less than initially. In summary, disengagement limited the continuous growth of the movement, but it remained active in some countries and many cities, and still is.

From a social perspective, the movement succeeded in elevating climate change to a central position on the political agenda and placing youth voices at the heart of climate change discussions (linked with the window of opportunity). However, it struggled to achieve substantial changes at the legal level.

A similar situation happens with Climate Justice Network, despite being active nowadays, it lost momentum through time.

The impact of these types of movements was significant, prompting Europe to invest in formal political participation projects at the local level, such as the EYES initiative in Granollers. This city, already committed to climate action and youth involvement, became a model for fostering active engagement and collaboration on these critical issues (contributing to the window of opportunity).

At the same time, in a tumultuous society where **climate change** discourses and worries started to become mainstream, the Catalan government started to take action. Political and legal inaction was no longer a choice, due to the consequences that societies could face if inaction remained, especially for not implementing proper measures to mitigate emissions and adapt societies to nowadays' most feared threat.

This is how the legal power in Catalonia approved **Law 16/2017 of climate change** in 2017 stressing the need to reduce greenhouse gas emissions and encourage energy transition as the means to climate neutrality (Portal Jurídic de Catalunya, 2017). In 2019, Catalonia compiled with **the government agreement for a climate emergency declaration**, reinforcing the threat that climate crisis represented

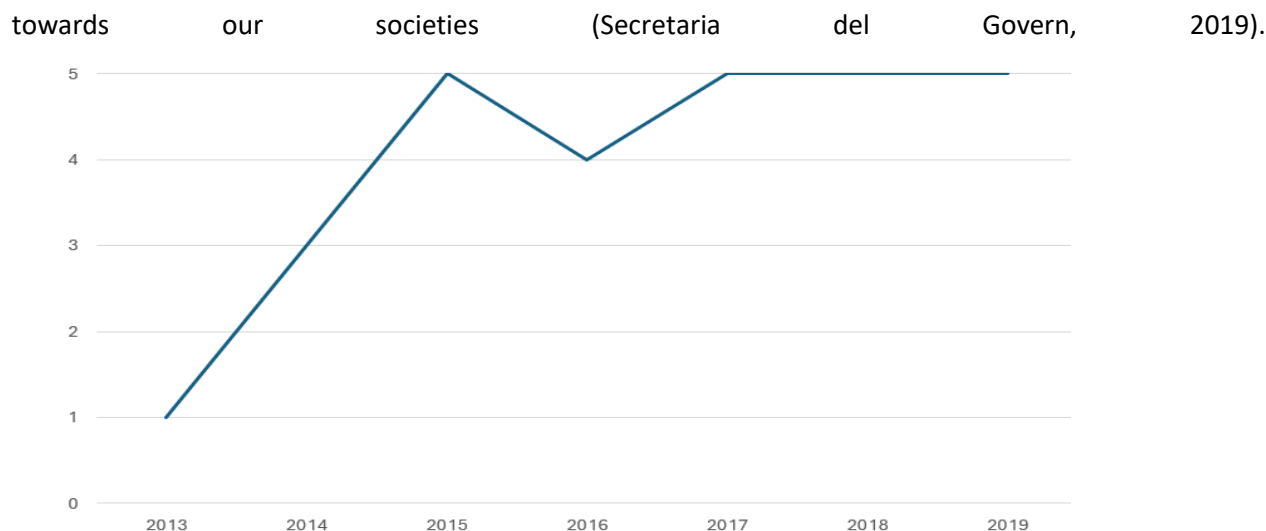


Figure 7.2.3: Pattern 3 Climate regulatory framework

Archetypes for pattern 3

In this case, the archetype identified for the climate regulatory framework is escalation.

Escalation

As climate change discourses became mainstream, several movements and actions unfolded with the aim to raise awareness about climate concerns, asking public authorities to act with a matter of urgency. The Catalan government listened to the problem and responded with legal measures.

This is how Catalan authorities decided to take steps towards acquiring a legal framework that tackled climate emergency in a legally binding way, to show citizens that climate change mitigation was a priority within the political agenda. As mentioned before, law 16/2017 of climate change was approved putting a focus on energy transition. Some years later, in 2019, the government agreed on a climate emergency declaration in accordance with previous laws and decrees, stating the need to reduce greenhouse gas emissions and achieve climate neutrality.

This regulatory framework was created as a response to the threat that climate crisis represented (and represents) for Catalan society. In recent years, the climate crisis has intensified globally. Catalan government is expanding its regulatory framework with new strategies and measures to make Catalonia resilient and facilitate the implementation of renewable energies in the territory.

Dynamics at regime level

Several protests and movements happened in Spain and Catalonia during 2008 and 2019, most of them related to socio-political concerns and social unrest and accompanied by a financial crisis that started in 2008. As has been explained before, 2009, 2011 and 2015 were especially remarkable due to the type of protests that happened, even shaping future Spanish politics, with the party “Podemos” being created as a direct fruit of mass protest.

All of this happened alongside the emergence of climate change discourses and the start of environmental protests, and it culminated with the creation of certain organizations that fueled the right to fight for climate emergency by citizens, especially young people. Future uncertainty triggered climate movements because there was no clear path in terms of political measures and legal actions when it came to tackling climate change effectively. The overall situation also shed light on the concept of “climate justice” to ensure no one was left behind in the matter, especially future generations and young people, who will be the ones suffering the consequences of today’s inaction. The consequences of these developments were the emergence of movements like the Extinction Rebellion and Fridays for Future (none originated in Spain but represented a tangible impact in Catalonia) and the Climate Justice Network (originated in Catalonia).

The enforcement of certain laws that protected and confronted the climate crisis through legally binding actions, put Catalonia and its climate regulatory framework at the forefront of how societies should handle the climate crisis.

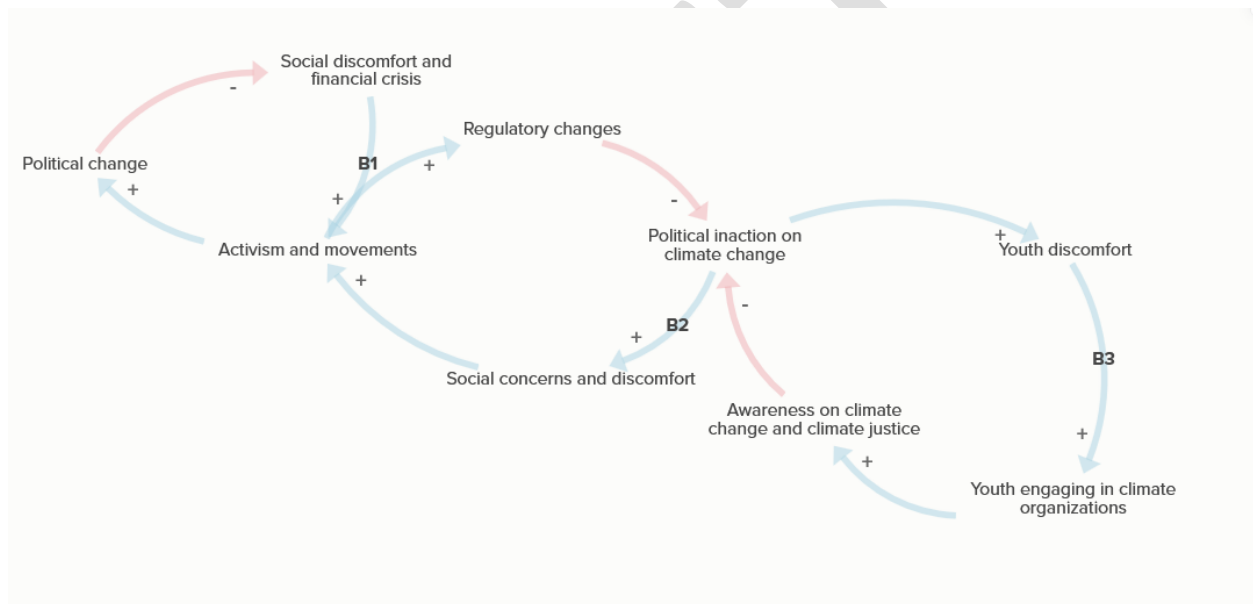


Figure 7.2.4: CLD Regime level dynamics

B1: social discomfort and financial crisis → + activism and movements → + political change → - social discomfort and financial crisis

B2: political inaction on climate change → + social concerns and discomfort → + activism and movements → + regulatory changes → - political inaction on climate change

B3: youth discomfort → + youth engaging in climate organizations → + awareness on climate change and climate justice → - political inaction on climate change

Niche level

Initiative goal:

The initiative wanted to involve youth in local climate planning, taking advantage of the fact that climate change discourse was at the core of political agenda and the fact that environmental organizations

(especially those led by young people) had emerged while EYES was implemented. So, the main goal of the initiative was to involve youth and raise awareness on climate change and climate justice.

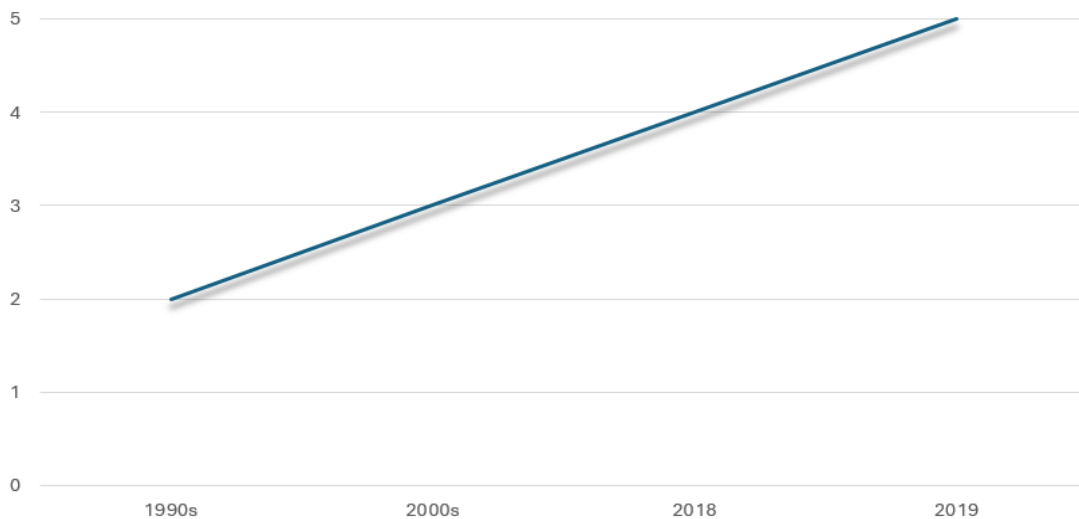


Figure 7.2.5: Pattern 1 on youth engagement (intensity measured from 0-5)

At the niche level, there are patterns identified which directly relate to Granollers structure and society, which have led through the years to a particular scenario where climate initiatives where youth are actively involved are common and successful.

There is an overall **involvement of youth** in all the projects related to climate and environment that the city undertakes. This happens for two reasons: one is because public administration supports this involvement when it comes to city level initiatives because there has been this willingness since the late 90s (with the creation of the Children and Teenagers' Council and the Green Commission for Green Schools). This trend kept increasing year by year until nowadays, with the creation of many local organizations (and projects) along the way focused on involving youth in local climate policy. One notable initiative led by the City Council is the Roots Forum, which engages in environmental and local climate action for young people in the city aged 12 to 16.

This is a benchmark in how the city fosters both the engagement of youth and the implementation of initiatives that will be beneficial to the city's wellbeing, which was also highlighted during an interview with a youngster involved in EYES (*Interviewee P03*). This shows, throughout the years, how Granollers has a rich social fabric that engages with different local initiatives, this applies for youth that decide to take part in activities and also public administration servants that trust and bet that certain projects will work well according to citizens' interests, in this case especially regarding climate and environment planning in Granollers.

7.2.4.3 Archetypes for pattern 1

For this pattern about youth engagement there is no archetype identified.

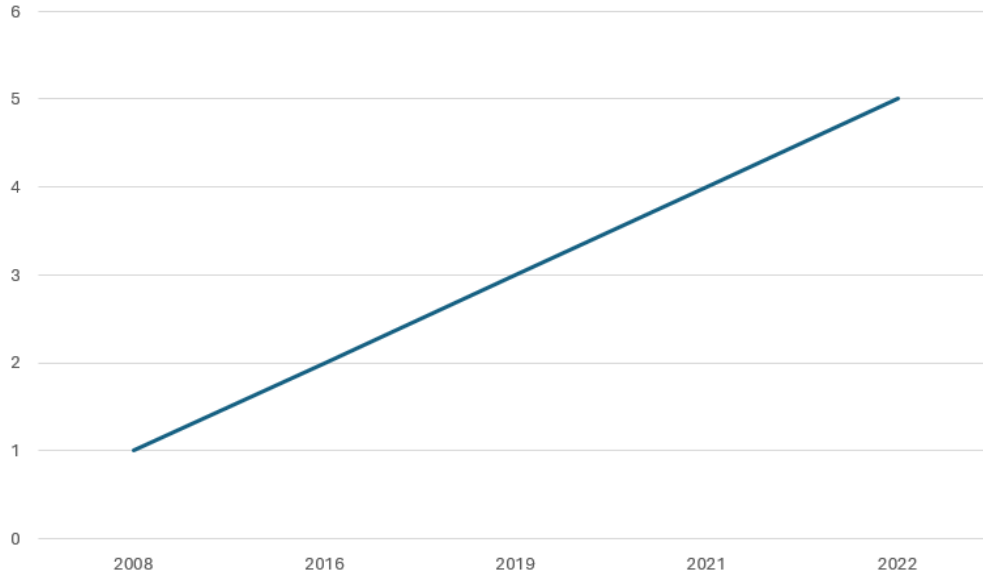


Figure 7.2.5: Pattern 2 on climate change interest at the local level - (intensity measured from 0-5)

At the same time, the common denominator between involvement of youth and a rich social fabric that is willing to engage in certain activities is environmental and **climate change interest**. Granollers is a city that engages in many types of initiatives, most of them with a social perspective, but climate and environment is also a priority in the political agenda (at least until 2022, when there was a political shift), as it has been seen through all the initiatives that the city council has implemented throughout the years.

Climate and environment also happen to be in the political agenda of Catalonia, Spain and Europe since the late 90s, especially since certain movements gained power around Europe regarding climate change action in 2018. Global tendencies also contributed to how climate and environment was perceived in Granollers and the importance of acquiring this perspective in local initiatives.

At the European level, the European Commission also works in this direction when it comes to implementing European projects in member states. The rising interest in climate change by young people has helped to allocate European funding on climate and environmental projects that incorporate youth as key agents. The availability of this funding allows the viability of certain projects like EYES in Granollers, which is being studied in this report. European funding also supposes a barrier at some point, because once the project lifespan and the funding is over, the project is over, as it happened in Granollers with some projects. In turn, other projects directly funded by Granollers city council remained active for a longer period, even some of them are still ongoing nowadays. The main difference is that European projects are created to respond to certain needs for a period of time, combining technical and practical approaches. Once European projects come to an end, their funding concludes as well, since they are part of a broader European initiative developed in collaboration with other partners. In contrast, local projects do not depend on other partners and are managed differently. Local projects in Granollers accompany the City Council's strategy along the years, based on benefiting the local society in the long term, so usually have a longer lifespan and depend on local administration budget.

These dynamics happening at the niche level are important because they provide a fertile ground for the emergence of certain initiatives so unique to Granollers. It started in 2008 with the Covenant of Mayors, continued in 2016 with the approval of SECAP and the emergence of the first Youth for Climate group. Then, in 2019 Granollers enforced the heat network as a strategy to reduce greenhouse gas emissions and implement sustainable energy practices through biomass energy. In 2021, EYES project finished but CLIMATUBERS started as its “child”. Finally, in 2022, COCONAT project started with the aim to renaturalize the city by multiplying the green urban structure around the Congost river (Plan de Recuperación, Transformación y Resiliencia, 2025). So, year by year, the local administration has been implementing green projects.

Archetypes of pattern 2

There are no identified archetypes for pattern 2.

Dynamics at niche level

Granollers commitment to establish a municipal-level framework for climate action with youth involved is noteworthy, given the implemented initiatives along the years. Granollers is made of a rich social fabric that engages with many local projects, from social-related to environmental.

As previously explained, several patterns unfolded between the 1990s and 2022 that significantly contributed to put emphasis on climate fight and fostered the creation of EYES in 2019.

These dynamics, all aimed at addressing climate change at the local level in Granollers, were actively promoted by civil servants within the city council. A common thread among these initiatives is their emphasis on climate change and youth engagement, seeking to inspire young people to take an active role in sustainability efforts and to implement local actions focused on mitigating the effects of climate change in their community. The purpose of climate justice is also in the spotlight, including vulnerable collectives as active actors.

All these initiatives within the niche level demonstrate a clear pathway towards a common goal. The overarching strategy follows a win-win approach, as the actions implemented aim to generate positive outcomes across multiple dimensions.

CLD of niche level dynamics

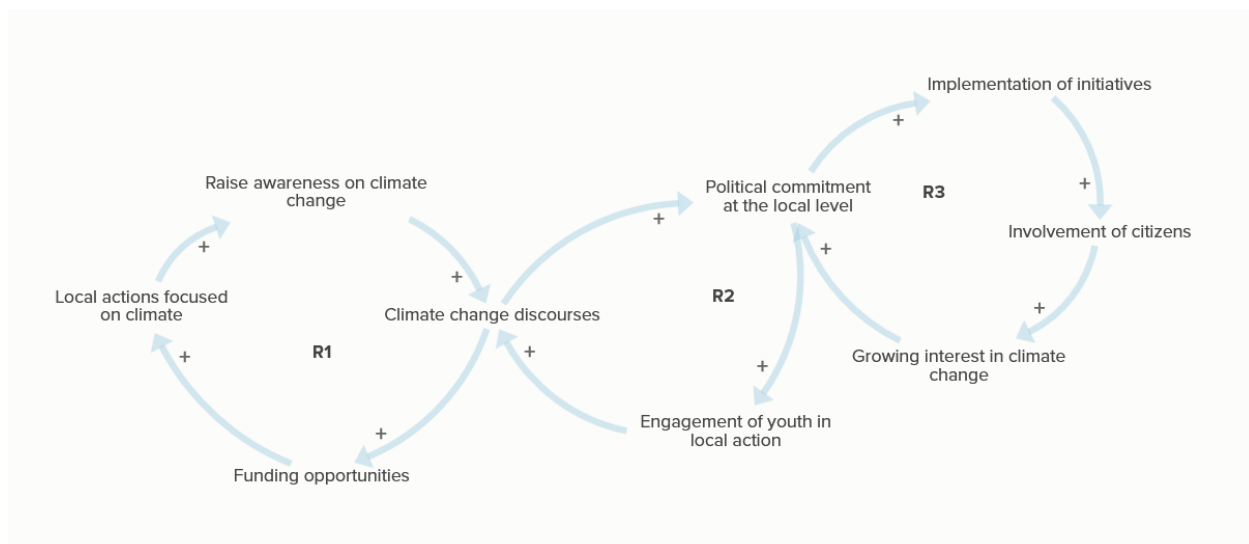


Figure 7.2.7: CLD Niche level dynamics

R1: climate change discourses → + funding opportunities → + local actions focused on climate → + awareness on climate change → + climate change discourses

R2: political awareness at the local level → + engagement of youth in local action → + climate change discourses → + political awareness at the local level

R3: political awareness at the local level → + implementation of initiatives → + involvement of citizens → + growing interest in climate change → + political awareness at the local level

7.2.5 Summary and Conclusion

7.2.5.1 Origin & Evolution of HE

The EYES initiative started in 2019. It was conceived as an opportunity to bring youth and local public administration closer in the field of energy and climate change. The purpose of the project was to empower young generations, especially those between 18 and 29 years of age, to have an active role in the local decision-making regarding climate change. In other words, it attempted generational justice in the environmental field.

Apart from targeting younger generations, which are the ones that will be suffering the direct consequences of the climate crises, EYES had a focus on vulnerable communities. The idea behind the CAI was that fighting climate change, especially on the local level, needs an inclusive approach.

However, the participation of youth in today's decision-making is not self-evident, either because they are not allowed to vote (e.g. too young, wrong citizenship) or because they are not aware of the mechanisms for having access to citizen participation (UBBSLA, 2025). The EYES project wanted to mitigate this by providing specific training and skills for young people, so they could feel secure about taking a stand on the policies being enforced in their territories. The project was performed in six different cities in the following countries: Spain, Denmark, Italy, France, and Bulgaria.

In Spain, the project was organized with a top-bottom approach, led by Granollers city council. Mainly, there was the AB, the group of experts, who taught young participants soft skills and knowledge on key

topics. The main beneficiaries of the project were the young people who benefited from the training that experts provided.

With the knowledge gained and the guidance received, participants managed to write and present policy recommendations to the city mayor.

On 31st of January 2021, the project finished. It did not continue, but it did imply several outcomes like the creation of a related project called CLIMATUBERS (which started in 2021). It is important to note that COVID-19 limited many outcomes of the project, for instance, to facilitate the participation of youth involved in the project in a European event, which could not be possible due to the pandemic restrictions.

7.2.5.2 Organization & Activities of HE

The methods of the project were mainly targeted on implementing activities with young people. These activities, as explained before, were led by the AB members and wanted to raise awareness on issues of climate emergency and local participation processes. The activities were very well received by youth groups because they saw the opportunity to learn about topics that directly affected them but were unknown before. In the course of the project, they became more aware and more enthusiastic about it (*Interviewee P01*). The activities were diverse, from brainstorming sessions to talks and workshops. The brainstorming sessions were enriching because they offered a space for dialogue and participants learned new perspectives that strengthened the objectives of the project (*Interviewee P03*). However, more training sessions would have been appreciated, as mentioned by Interviewee P03.

The overall organization in EYES is characterised by a top-down approach, having the city council in Granollers as the main organizer. Sometimes it was difficult to cope with young people's commitment due to school, timetables and leisure activities, but it was clear that those who attended the sessions were engaged and motivated, and gained valuable insights that fosters individual empowerment (*Interviewee P04*).

7.2.5.3 Goals & intended Outcomes of HE

The goal of the project was to empower young people to address local climate issues, and to foster a sense of accountability for Granollers future, while strengthening the relationship between young citizens and local public administration.

The project's foundation was to introduce participants to the city's SECAP, as it was largely unknown to them. The goal was to raise awareness of the city council's actions on climate change. This, combined with training sessions on different topics, led to the project's key outcome: young people presenting climate and environmental measures to the mayor to support climate change mitigation and enhance the city's adaptation to future challenges.

Achieving this milestone was significant. However, many of the proposed actions were already included in the SECAP, as youth tended to suggest general environmental measures that the city council had already considered when adopting the plan.

Beyond this, the project also successfully fostered awareness of local participation processes and brought young people together around a shared objective: recognizing the urgency of the climate emergency and understanding their power as citizens to advocate for more sustainability.

While these outcomes were initially intended and did materialize during the implementation of EYES, driven by participants' engagement and project dynamics, the policy recommendations did not achieve a long-term impact.

7.2.5.4 *A multilevel perspective on the CAI using the MLP visualization*

What kind of transition has occurred from a multi-level perspective?

The historical example of EYES is included in the formal political participation category, which means that it was constructed around a top-down approach, with Granollers City Council as an active actor in the development of the initiative.

The project wanted to empower young people to address local climate issues, making them key stakeholders in local climate decision-making. When the project started in 2019, there were several dynamics that contributed to the implementation of the project.

At the **landscape level**, climate change discourse was highly present on the political agenda, especially with the Paris Agreement signed in 2015 as a key milestone demonstrating the commitment of developed countries to tackle the climate emergency. Additionally, the year before EYES began was essential, as global mobilizations advocating for climate action and climate justice gained presence. This shift was particularly significant for younger generations, with movements like Fridays for Future and Extinction Rebellion raising awareness about the consequences of inaction on climate change. These movements did not determine the implementation of EYES, but they definitely highlighted the urgency of the crisis and empowered youth to demand a systemic change.

For Spain, a particularly meaningful event was the COP25, held in Madrid in 2019. Climate change discussions were highly visible, and youth engagement in these debates was growing. For instance, during COP25, world leaders joined youth activists to sign the Intergovernmental Declaration on Children, Youth and Climate Action, the first ever written document to defend youth-centered climate policies and action, representing a milestone in including youth voices in climate agreements (UNICEF, 2025). Some months before, in September 2019, Greta Thunberg participated in the United Nations' Climate Action Summit and gave a powerful speech urging world leaders to take effective action on climate change. She emphasized that younger generations felt betrayed by inaction and made it clear that they would mobilize on their own to protect the environment and future generations (NPR, 2019).

This context helped to shape the creation of initiatives like a youth climate group, reinforcing the role of young people as active participants in the fight for a more sustainable future.

At the **regime level**, Catalonia (and Spain) experienced seven years of youth mobilizations (2008–2015) driven by social, political, economic, and environmental concerns (Garcia, 2017). These movements reflected the strong commitment of young people in Catalonia advocating for their rights through activism. In 2015, the Climate Justice Network was established, bringing together organizations and stakeholders dedicated to implement climate action. Catalonia's vibrant social fabric created fertile ground for citizen participation in various mobilizations. Also, in line with overall climate change discourses, Catalonia approved Law 16/2017 of Climate Change in 2017 and the Government agreement for climate emergency declaration in 2019, highlighting the adherence of Catalonia in environmental European concerns.

At the **niche level**, Granollers is prominent for its rich social fabric, where citizens actively engage in civil society organizations. Environmental initiatives, in particular, have been prominent since the late 1990s.

Beyond strong civic engagement, the city council has been highly committed to environmental actions, investing in pursuing to build a greener city and recognizing young people as key actors in this effort, as previous initiatives have demonstrated. The 2019 youth climate group in Granollers emerged as another initiative supported by the city council, with young citizens dedicated advocating for a more sustainable future for their city.

How has this transition occurred?

At the **landscape level**, Spain and Europe were experiencing a critical moment regarding the climate emergency. Mobilizations were gaining power, and it was foreseeable that urgent action was needed to address climate concerns and climate justice narratives. Younger generations were increasingly recognized as key actors, determined to make their voices heard and advocate for the just future they envisioned.

At the **regime level**, aligning with the broader context, this period (early 2000s until the implementation of EYES in 2019) was marked by social movements driven by social unrest, alongside a growing climate awareness. Legislative measures were also being introduced to address these challenges. This environment created fertile ground for initiatives like EYES in specific Catalan cities like Granollers.

At the **niche level**, several factors contributed to the window of opportunity for the project's realization. These included European funding availability, youth engagement in environmental initiatives, and a growing societal interest since the late 90s in climate action.

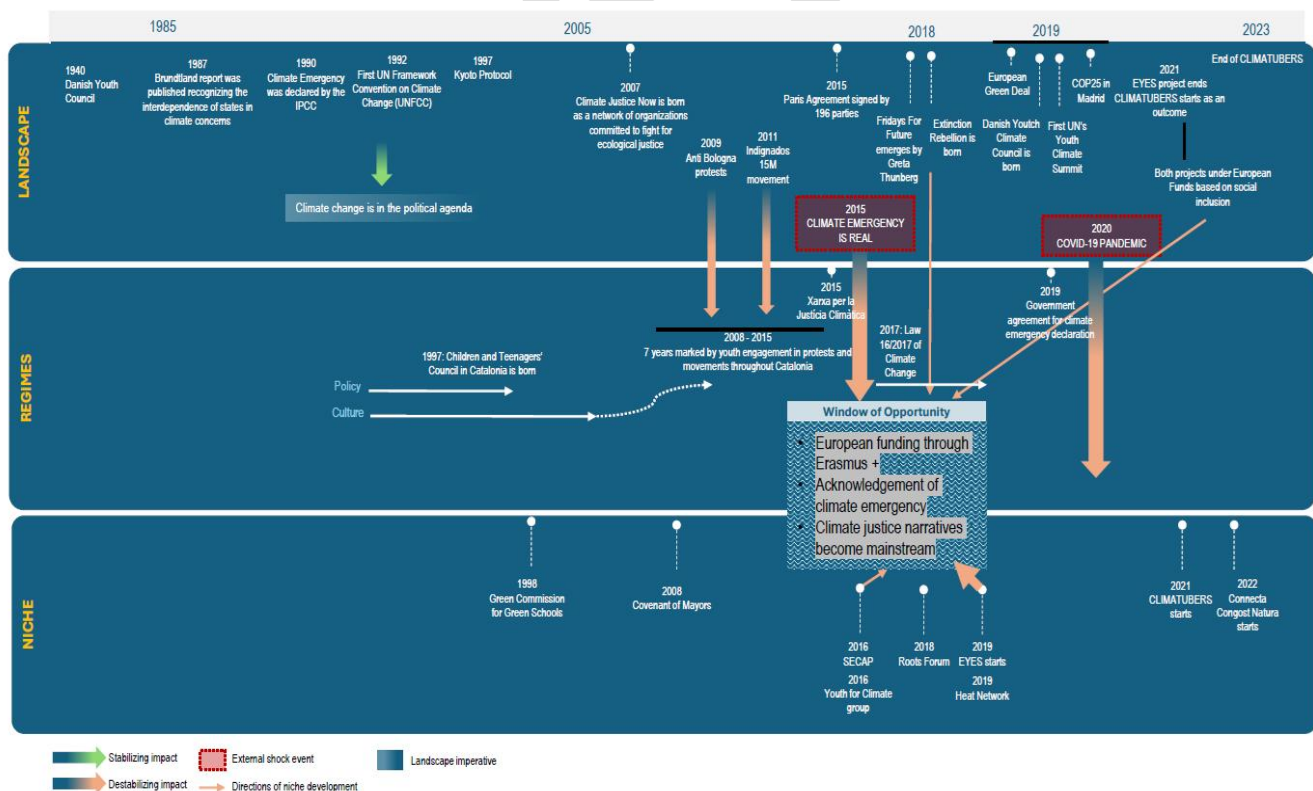


Figure 7.2.7 MLP visualization: Multilevel perspective on the CAI

Ultimately, EYES was a powerful initiative empowering young citizens to embrace their role in society, develop political advocacy skills, and respond to today's most pressing challenge: climate emergency and climate justice for future generations.

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7.3 Resource wise municipality (FI)

7.3.1 Interviews

7.3.1.1 Documentation of application of the method

The key stakeholders for this historical example were interviewed in April 2024.

Table 7.3.1 List of interviews and details

Interview code	Country	Date	Duration	Format	Function of the interviewees in the CAI
IH1	Finland	23.4.2024	1 hour	In-person	Municipality official
IH2	Finland	23.4.2024	1 hour 10 minutes	In-person	Municipality official
IH3	Finland	23.4.2024	1 hour 11 minutes	In-person	Municipality council member
IH4	Finland	23.4.2024	1 hour	Online	Municipality official

7.3.1.1. Results

According to the interviews, the initiative to pursue carbon neutrality and sustainability efforts came about from a group of municipality officials and politicians, who were interested in combating climate change. They had been interested in climate issues for a long time and saw an opportunity to pursue sustainability to create a new brand for the municipality after the IT boom in Finland had passed and major companies had moved their factories abroad. In the 2000s and early 2010s, it was rare especially for small municipalities to conduct climate efforts, as climate change and green growth had only become topics in the public discourse quite recently. Therefore, it was an opportunity for the municipality to create a new profile for itself that stands out from other small municipalities. There were also motivations to make savings regarding energy use, such as heating. Therefore, pursuing a sustainability brand combined these motivations. However, when the key stakeholders introduced their plan to the municipal council to pursue sustainability, it was important that the climate and sustainability efforts were justified first and foremost as economically beneficial projects, instead of emphasizing the environmental value:

“But i think that the core of why the whole thing started to so to say, take flight, is that at that time with only green thought or only reducing carbon footprint or climate actions, we wouldn’t have gotten the decisions through, so we needed also an economic incentive. So we looked for things, that by doing this and that we can get economically sensible decisions” (IH3)

The transformation towards a more sustainable municipality started from cuts on energy costs, such as preferring renewable energy sources, switching to LED lighting and lowering heating in public buildings. In 2012, the municipality joined the network of carbon neutral municipalities called HINKU, committing to goals to reduce li’s carbon footprint. Over time, the sustainability efforts became more ambitious and included for example recycling and the inclusion of municipality residents to the sustainability efforts through various campaigns. For example, sustainability related efforts were introduced in the local schools’ curriculum, and they were taught about saving energy, recycling and saving water. In collaboration with the university of Vaasa, a so-called 50-50 model was introduced, in which elementary

schools would receive 50% of the amount of money saved through energy savings and the students could decide what the money would be spent on. One of the interviewees explained the 50-50 model in the following way:

“The idea of it is that school property’s heating water, air conditioning, and expenses are measured, and we receive the level in which the property works. Then these children are taught to measure with luxmeters whether the classrooms need more light and to think, do they need to have the water running so long when washing hands and so on. And to measure the right temperature and so. Now when the school saves in property expenses, let’s say from the starting point of 10 00 euros. Then the children receive 5000 euros, and the municipality gets 5000 euros. And then at the school children can decide how to spend those 5000 euros. And this has been a success in the way that both the children and the municipality like it. And it is very educating from the point of view of resource wisdom.” (IH3)

In addition to including the youth to sustainability related activities, engaging the residents of Li in general in the sustainability projects became an important goal. However, reaching the locals residents and raising interest towards sustainability and climate issues turned out to be challenging at first:

“A couple of times we tried this traditional advertising in some local newspaper and such, energy counseling in the public library, welcome at that time and so. It felt a bit flat, some people showed up, but we didn’t really get through to people. Then we thought that we could do it the other way around and go where they already gather. So then we started to contact associations and such. We went to the Martha association and pensioner associations and their meetings. We held quiz nights there. That way the success was completely different, and the retirees were excited to tell stories how they have done these things. There was a lot of talk and stories.” (IH4)

Another interviewee described the process in the following way:

“Our job was to go among the municipal residents. We tried a little bit of gamification for instance. We tried to have these energy clinics, and no one showed up. Like boring, and we ourselves understood that we wouldn’t even ourselves go to these kinds of events. And we stated that, let’s now go where the people naturally are. So we went to village associations, pensioner associations, where we have lots of active associations. So we started to tour pensioner’s associations. We had these energy quizzes and energy talks and they became well liked.” (H2)

Over time, the municipality continued to have plenty of projects and events to engage citizens in sustainability activities, such as recycling and being mindful of their carbon footprints. They managed to gain plenty of publicity in media nationally and internationally for their actions and achievements. The interviewees agreed that overall, the climate action programme has been successful. However, the interviewees discussed a change in the motivation to continue the pursuits. One of the interviewees discussed how currently the municipality is going through a period of stagnation regarding the climate efforts:

“I would say that maybe for a couple of years the whole thing has been resting on its laurels, maybe the corona also slowed down and stopped certain actions. Maybe it has become that since the easy things have basically been done, that we have switched from fossil fuels to geothermal heat and sorted out public buildings, then the next steps are a lot more difficult. It takes plenty of determination from decision-makers and investments. In these municipal situations, in which many

other municipalities are in addition to li, those decisions are very hard to make. In that case I see that these kinds of efforts are very important to make, how to get municipalities make the next steps in addition to the easy solutions” (IH2)

In addition, the interviewees noted there had been a change in the political atmosphere and the political motivation to pursue the climate efforts had deteriorated:

”It probably happened around the same time when this media attention grew. Then it started to somehow create some noise particularly in municipal politics” (IH2)

The interviewee continued:

”I noted that it suddenly was experienced that too much effort is put into the climate efforts, although all actions were financially justified. So I don’t really understand how it turned around like that. And it could be why for the past couple of years the whole thing has been resting on its laurels a bit and now we are letting this political field calm down. At least I felt that it polarized too much” (IH2)

The exact methods of opposition to the sustainability efforts weren’t discussed. Additionally, there were interviewees who viewed that the opposition originated from the ideologies on the national politics level instead of the municipality, whereas some saw it as an internal problem. Some of the interviewees also contemplated on the effects of changing staff to the motivation to pursue sustainability and how individual motivation is important in these kinds of projects. The slowing down of the sustainability efforts was brought up in almost all of the interviews. Looking back, the interviewees discussed that perhaps there should have been even more collaboration in the early days with the people opposing the sustainability efforts. Improved inclusion of opposing views to the conversation from the start was seen as a solution to prevent a stronger wave of opposition later:

”I think that’s why the conversation went crazy at one point, it pointed out that we didn’t give enough space for that negative conversation as well. Perhaps we went on in our own green bubble for too long, and didn’t enable bringing out concerns and such. So the conversation wouldn’t explode like this, so we have to stop the whole thing for a couple of years so it would calm down” (IH2)

However, another interviewee explained how this opposition was a recent phenomenon and didn’t exist during the early days of the sustainability action planning:

”I think that what we succeeded at in the beginning was when we started to do this resource-wise roadmap which is kind of a fundamental document in the municipality. Plenty of time and effort was put into that. It was done with a work group which was not chosen by the number of members of the municipal council each political party had. Instead, one representative was chosen from each party’s municipal council group. Then there was a secretary from Micropolis Ltd, a civil servant. And in this workgroup, whenever we discussed topics such as water systems or waste management, external experts from our own organization or from outside the organization. And set the goals and contents. So they went quite painlessly through in the council too, as each political party had had their say in the process and there was no problem.” (IH3)

Regardless of the recent slowing down of the sustainability activities, the interviewees agreed that the initiative has been successful in cutting carbon emissions and increasing sustainability measures and gaining income from wind power plants. When asked about the main achievements of the sustainability work, one interviewee noted the increased income from wind power and the significant savings made from switching to renewable energy sources. But the interviewee also mentioned the sense of community as a key achievement:

”And then another key result is this development of the identity of being from Ii, the building of this brand. We are quite proud of ourselves now, we weren’t before this, that we have managed to do something like this, which has been noted on the national and European level. It does create a community spirit and a feeling that we have created something.” (IH3)

7.3.2 Textual Analysis

7.3.2.1 *Documentation of application of the method*

The data selected to the analysis included news stories on national and regional level, a story by an international publicist for an international audience, material about specific initiatives within the sustainability framework, material from the initiative itself, academic publications, and lastly, publications from the regime level some texts about municipalities’ sustainability actions in Finland in general. Several academic articles and a dissertation are included to bring context of similar research conducted regarding municipalities and sustainability. The majority of the texts were in Finnish and the intended audience are Finnish-speakers. However, an international viewpoint is provided by BBC, which conducted a news reportage on Ii regarding their success on sustainability.

In total, the data for this textual analysis consisted of 40 texts and 1 video in total. The publication period of the texts covers the time span of the years 2010–2024, thus covering the years before the municipality of Ii joined the network of carbon neutral municipalities up until last year. Therefore, it could be noted from the data how the news stories narratives have changed over the past 14 years regarding the municipality of Ii and how the latent and manifest content has developed over time. In addition, the material from the municipality provides a description of the measures taken over the years and how the municipality itself discusses the projects and the achievements on carbon neutrality. In addition, the academic sources regarding the overall situation of municipalities and their carbon emissions provide a context for comparison.

7.3.2.2 *Results*

The general narrative regarding the municipality of Ii was generally positive in the news stories, which were published between the years of 2013 to 2024. The first news stories included into the analysis date back to 2013. The news stories were set in the Ii region and included interviews, often from the municipal manager, representatives from the company Micropolis Ltd or municipal council members, who were actively taking part in the planning and the implementation of the sustainability and carbon neutrality measures. Therefore, the included interviews in the news media are from the CAI (collective action initiative) perspective. Commentary from the local residents was rare in the news articles.

The articles discuss how Ii has started its journey towards carbon neutrality and sustainability by deciding to build wind farms and joining the network of carbon neutral municipalities in Finland (HINKU) in 2012. The news articles present the collective action initiative in a very positive light. In the following years and especially during 2017 – 2019, Ii was featured in the National Broadcaster Yle’s stories regarding its

sustainability measures and changes in political culture. An article in 2017 discusses the political culture of Ii, and there is not yet mention of the carbon neutrality efforts. The political culture is described to have been rather quarrelsome in the past, but that a significant change has happened for the better and the political culture in the municipality council has improved. In 2019, Ii was featured in a BBC documentary on Ii's climate efforts and how they have managed to include the youth to their efforts. In the same year, Yle published an article in the same year about his documentary and how a small municipality in Finland has managed to gain international attention. Therefore, the news focused on a positive narrative on Ii's efforts. The stories emphasize how regardless of the municipality's small number of residents and remote location, Ii has managed to make a difference and gain international attention with their action. The municipality is presented as unified in their motivation to pursue the set goals of the carbon neutrality measures.

However, there is a shift since 2021, when the news stories start to bring up differing opinions in the carbon neutrality and sustainability efforts and discuss the limits of the efforts. The articles include interviews from municipal politicians, who question the need for further sustainability measures, referring to Ii's limited ability to influence climate change on a global scale. In addition, an article in a regional newspaper in 2024 discusses how wind farms are losing their public acceptance. The story brings the notion that the momentum for Ii for pursuing more wind power has stagnated. Therefore, in the news stories there seems to peak interest in 2013 and in 2019. Since the pandemic, critical voices towards sustainability efforts are brought up more.

In the material produced by the municipality itself, the main topics were carbon neutrality, energy; their documents discussed the goals and actions taken for carbon neutrality and sustainability. Similarly, the reports conducted by other institutions describe the cuts of carbon emissions that Ii has managed to conduct. Academic publications included in the analysis described the context; what actions municipalities in Finland in general have taken to pursue carbon neutrality and sustainability.

In summary, the main takeaway from the analysed texts was that the news articles have a very positive tone about the municipality of Ii and their climate efforts. However, since the 2020s, differing opinions and challenges of the sustainability efforts are visible in the textual analysis data.

7.3.3 Social Network Analysis

7.3.3.1 *Documentation of application of the method*

The social network analysis was conducted to analyze the relations between the key stakeholders identified during WP1. The key stakeholders in this historical example were identified during the preliminary research phase through context and stakeholder analysis. The key stakeholders in this historical example included high-ranking employees of Ii municipality, members of the municipal government and employees of the Ii-based company Micropolis Ltd, who worked together to innovate a new direction for the municipality. Their relations are defined by cooperation, with slight conflict among the stakeholders within the municipal council regarding the future of the sustainability efforts.

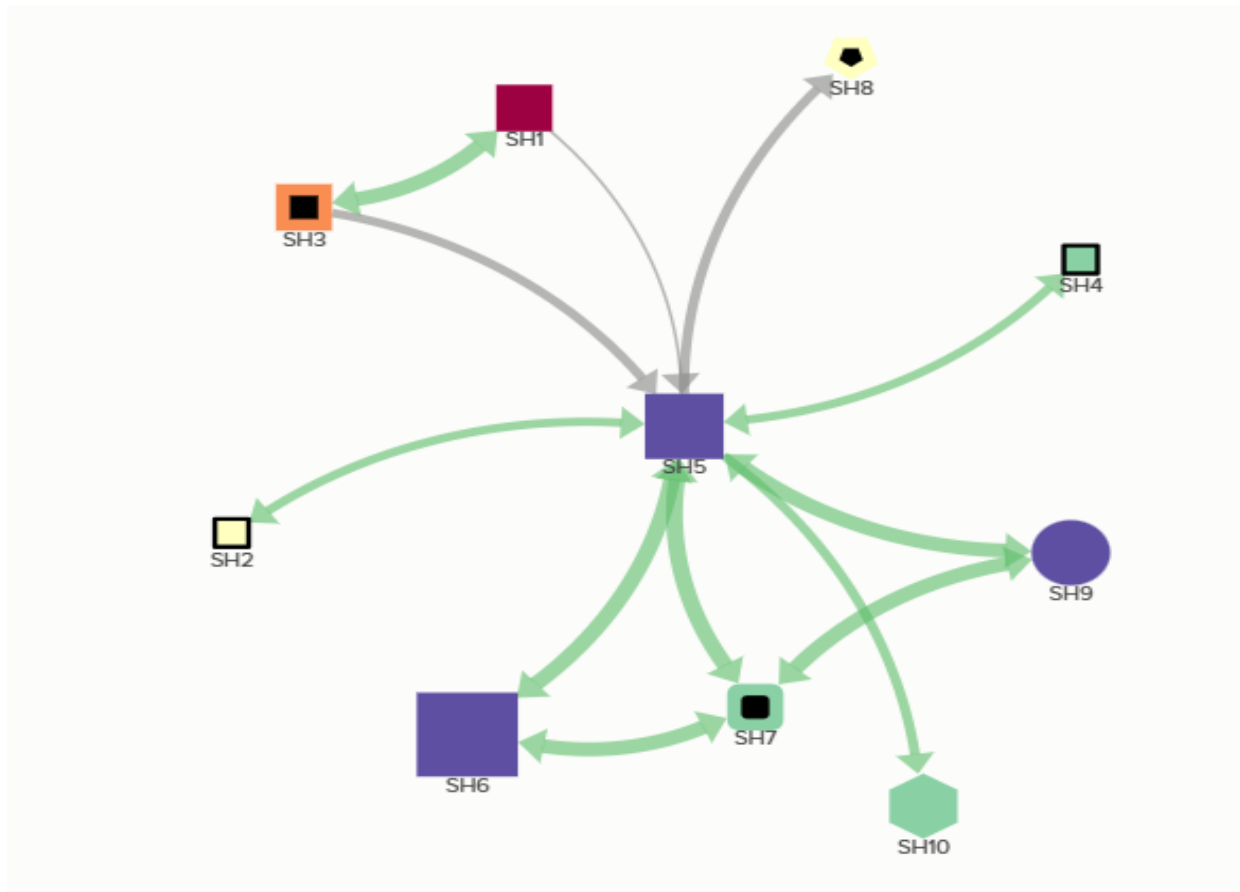


Figure 7.3.1: Social Network Analysis

7.3.3.2 Results

The most powerful stakeholders in this network represent the niche, who were central in the introduction of sustainability efforts to the municipality's policies. The members of the niche included the municipal council, municipal government and municipal manager. What makes the niche interlap with the regime level, is that they have access to decision-making power in the municipality and an opportunity to propose policies.

The municipal council is an important stakeholder in this historical example, as they hold decision-making power regarding the municipality's policies. The councils in Finland are responsible for the municipality's finances and operations and exercises the municipality's decision-making power, as the council decides which institutions there are in the municipality and how the authority and tasks are divided between trustees and office holders. It is the municipality's highest institution, which is elected in municipal elections that are held every four years (Association of Finnish municipalities 2023). Similarly to the municipal council, the municipal government of Ii was in an important role in this historical example, preparing decisions that are decided by the council and implementing them. The municipal government also oversees the legality of the council's actions. The municipal government supervises the interests of the municipality in its operations and represents the municipality and exercises the municipality's right to speak. In the municipality of Ii, the leftist party and the centre party have traditionally been the biggest political parties in the municipality of Ii. However, since the 2010s, the conservative and nationalist party

the Finns have gained seats in the municipal council. Similar development has occurred also in national politics, as over the years the Finns have become the second largest political party in Finland.

According to the textual analysis and the interviews conducted during WP1 and WP2, the municipal manager had a key role in the planning and implementation of the sustainability policies especially during the first years of the initiative. Our textual analysis found that the municipal manager was often featured in interviews in the media. The manager's relationship with other stakeholders was cooperative. The manager's roles include municipal administration and financial management and speaking on behalf of the municipal council. The municipal manager has changed over the years, but the position's key role remains in taking part in the sustainability policies.

Another important stakeholder is Micropolis Ltd., which is a company that focuses on the development and research of climate action and renewable energy and cooperates closely with the municipality. They are responsible for the implementation of the business programme of Ii, business services, and municipal communications and marketing.

Residents of Ii were recognized as powerful stakeholders, as they hold the power of voting the representatives to the municipal council. Their participation in the sustainability efforts have been a key role in the efforts' success. According to the interviews, reaching the local residents had its challenges, but over time became cooperative. As noted in the interviews, the overall enthusiasm towards sustainability has slowed down over years, but the relations between the initiative and the local residents can still be counted as cooperative.

Currently, the niche can be described as mature, as they managed to introduce their sustainability goals into the municipality's policies and gain the acceptance of the municipal council. In addition, through campaigns, they managed to educate locals on the importance of sustainability and engage them in sustainability activities. They also gained attention in national and international media. The municipality also took part in country-wide networks of carbon neutral and sustainable municipalities thus committing to set goals in reducing their carbon footprint. Municipality of Ii has also collaborated with academia in order to conduct tools to engage citizens into climate action. The relations between the stakeholders are collaborative, as they share a common goal. However, within the municipality, there have been disagreements on whether the sustainability efforts are still necessary. This has caused some tension within the niche.

In summary, the main stakeholders' social network can be described as cooperative or neutral. The main sources of conflict can be identified within the niche, among the members of the municipal council, due to the changing dynamics of political parties and changing priorities for spending money. This shift is explained further in the system mapping.

7.3.4 System Mapping

7.3.4.1 *Documentation of application of the method*

To conduct system mapping for this historical example, data from previous research steps, such as interviews and literature analysis were analysed from the perspective of Braun's (2002) system archetypes. After identifying the most suitable archetype, causal loop diagrams were formed based on the historical example's regime and niche levels. For this historical example, limits to growth, was the most suitable match to describe the development of the historical example on both regime and niche levels. For the niche level, the limiting factor for successful sustainability measures has been decreasing motivation

for further measures, due to concerns of their public acceptability. On the regime level, similar development was identified. Finland has been introducing sustainability measures since the introduction of its climate strategy in 2001, but a political shift towards right-wing policies has contributed to decreased motivation for further sustainability measures.

Finland's first climate strategy was introduced in 2001. The strategy follows the Kyoto protocol's aspiration towards maintaining the greenhouse gas emission levels of the year 1990 (Finnish Government 2001). Since then, it has become a practice for every government to create their own climate strategy. Later, in 2015 Finland introduced its first climate law, which included a long-term gas emission target of 80% by 2050 compared to 1990 levels (Climate Law 609/2015). The sustainability measures on the national regime level were strengthened during 2019 – 2023 with ambitious climate goals and the updating of the 2015 climate law. The goal now was for Finland to be carbon neutral by the year 2035 (Ministry of Economic Affairs and Employment 2022). Due to the inclusion of sustainability measures, Finland's greenhouse gas emissions have been in decline. In 2022, Finland's greenhouse gas emissions were 46 million tonnes CO₂-eq (Statistics Finland 2023). Finland's greenhouse gas emissions have decreased by 32% (23.0 million tonnes CO₂ eq.) since 1990 and 44 percent (37.3 million tonnes CO₂ eq.) from 2003, when emissions were at their highest during the time period 1990 – 2020 (Statistics Finland 2021).

Although Finland had had a climate strategy from 2001 onwards, it was rare for municipalities to be involved in climate programmes. For example, in 2009, only 10% of municipalities in Finland had climate targets. Nowadays, over 80% of Finnish municipalities have a climate plan. However, the corresponding number for small municipalities of less than 10 000 residents is significantly lower. Only half of these small municipalities in Finland have a climate plan. More than half of municipalities with a climate target aim to reduce emissions by 80% and/or be carbon neutral by 2030. One in four municipalities has the goal of being carbon neutral by 2035. However, according to the survey conducted by the Association of Finnish Cities and Municipalities, the main challenge for the municipalities with their climate targets is the economy. Finland's economy has stagnated and inflation is affecting citizens' purchasing power. Other common challenges include, low interest of municipal decision-makers in climate work and lack of concrete climate-resilient solutions and polarization of climate debate (Kuntaliitto 2023).

Therefore, climate and carbon neutrality measures have been bound to the regime level in Finland during the same time that the municipality of Ii has started to introduce sustainability measures to its policies. Another important factor has been the rising awareness on climate issues among the public. Between 2000s- 2010s, as climate change became an increasingly visible topic in the national media (Lyytimäki, J. 2011), as climate measures were being introduced to national policies and strategies. Currently, Finland has been ranked first in the EU's survey of climate change knowledge. Finns scored 7,22/10 on average, whereas the European average score was 6,37. However, knowledge gaps remain regarding climate change. According to the survey, Finns in general are knowledgeable about the causes and consequences of climate change, but lack knowledge on practical solutions. Interestingly, young adults (aged 20-29) know less about climate change than people over 30 (European Investment Bank (2024).

In addition to increased awareness on climate issues and the introduction of climate measures in national policies, an important motivator for the CAI was the municipality's financial situation. Finland had suffered a severe economic depression in the 1990s due to a burst of a financial bubble and drastic stop commerce between Finland and the Soviet Union (Kiander & Vartia 2011). Although Finland recovered due to an IT boom, the country experienced another economic depression in 2008-2010 due to the international

market crash (Freystätter & Mattila 2011). These depressions affected Ii's economy as well, and caused an imperative to make savings in energy costs and find a way to attract new business to the municipality and create jobs.

In summary, the main reasons for the CAI development on the regime level were the financial imperatives caused by recession, the need for the municipality to make savings and find a new way to stand out from other municipalities in the region. In addition, climate issues had started to be introduced in national policies since the early 2000s, which meant rising awareness of climate issues on the national level.

Dynamics at regime level

Ii is a small municipality in the North Ostrobothnia region in Finland, with about 10 000 residents, that has managed to gain publicity nationally and internationally by finding innovative ways to include sustainability and climate issues to their policies and everyday lives of the municipality's residents. Ii's journey towards sustainability started in the late 1990s by top officials of the municipality, and representatives of the municipality-owned company Micropolis Oy as an effort to reduce energy costs and to attract more businesses to the region. Ii was among the first municipalities in Finland that profiled itself strongly as a sustainable municipality and its carbon neutrality measures were innovative when they were first introduced. Since joining the network of carbon-neutral municipalities "HINKU" in 2012, the municipality has managed to cut its emissions by 22% (SYKE 2024). The current goals for the municipality are to decrease CO₂ emissions 80% compared to 2007 by the year 2030, increase recycling rate to 65% and halving the consumption-based carbon footprint from the 2005 level (Municipality of Ii 2024).

An enabling factor for the CAI on the regime level was the introduction of climate and carbon neutrality measures to the regime in Finland and rising awareness on climate issues among the public. In addition to increased awareness on climate issues and the introduction of climate measures in national policies, an important motivator for the CAI was the municipality's financial situation.

Therefore, the main reasons for the CAI development on the regime level were the financial imperatives caused by recession, the need for the municipality to make savings and find a new way to stand out from other municipalities in the region in order to attract new businesses to the municipality. In addition, climate issues had started to be introduced in national policies since the early 2000s, which meant rising awareness of climate issues on the national level.

The municipality's efforts for sustainability have been successful, but the interviewees expressed some concerns for the future. The interviewees mentioned that there has been a stagnation in the municipality's sustainability efforts since 2020. One of the reasons is a financial one. Covid-19 increased costs of the welfare system, Finland had to take on more debt to cover all the costs (Greve et al. 2021). Economy and national debt have since then been the most important themes in Finnish politics and right-wing political parties (Raunio 2024). In addition, since 2022: Russia-Ukraine war affected the cost of groceries and caused inflation. The cost of living has increased and there has been a shift in national politics towards austerity politics and the popularity of far-right-leaning policies has increased.

CLD of regime level dynamics

<https://embed.kumu.io/92153c68b50c830307a791630166295f>

Limiting condition: political shift away from prioritizing climate issues → -political motivation



B: -political motivation → + sustainability policies → + political motivation

R1: sustainability policies → + reduced carbon emissions → + sustainability policies

Niche level

- Initiative goal: To make savings regarding energy costs, attract new businesses to the area and increase sustainability in the municipality
- Pattern(s) of key factor(s) at niche level
 - Rising awareness in climate issues, financial imperatives
 - Finding ways to combine sustainability and economic gains, decreasing carbon emissions

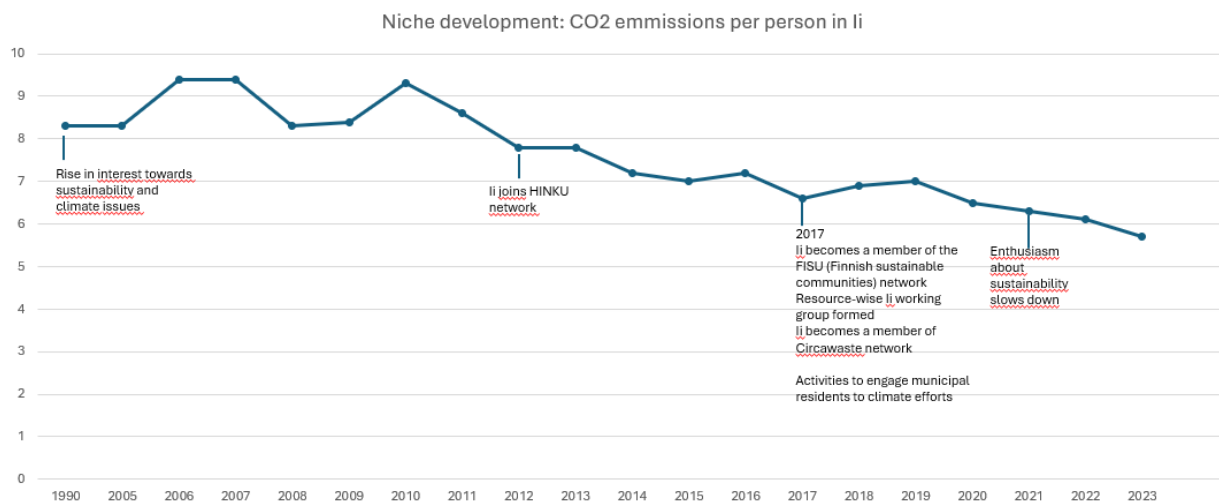


Figure 7.3.2: Niche development: CO2 emissions per person in Ii

The table above describes the carbon emissions by person in the municipality of Ii. As the table describes, the emissions have been in steady decline since 2010. This is due to the variety of sustainability measures that the municipality has introduced. The municipality started to introduce carbon neutrality and energy savings measures in the municipality's buildings, such as switching to LED lights and switching to renewable energy during the 2000s. The stronger profiling with sustainability more publicly began in 2012 when the municipality joined the network of carbon neutral municipalities "HINKU". The network is coordinated by the Finnish Environment Institute (SYKE) and the members of the network aspire to reduce their carbon footprint by -80% by the year 2030 compared to the emissions in 2007 (Hiilineutraalisuomi.fi 2024). Since then, the municipality started to introduce carbon neutral solutions in various projects and campaigns to reach their goals regarding sustainability. Later, in 2017, a "Resource-wise Ii leader group" was formed to plan Ii's sustainability agenda. The group has one member from each of the political groups in the municipal council, meaning 6-7 members. This way, collaboration and consensus is secured when deciding the next steps regarding sustainability work. In the interviews, the Resource-wise Ii leader group was agreed to be an effective way to include all political parties to find sustainable solutions and increase discussion between the political parties. We currently don't have exact measurements of whether the leader group has increased effectiveness number-wise, but the interviewees agreed that cooperation has improved since the introduction of the leader group.

Also in 2017, Ii joined another national network. Fisun (Finnish Sustainable Communities) is a network of Finnish municipalities committed to working towards becoming greenhouse gas emission free and waste free and curbing overconsumption by 2050. The network measures the resource efficiency of the member municipalities by using three indicators: greenhouse gas emissions per capita, material losses and ecological footprint per capita. The resource efficiency work of the Fisun municipalities is guided by road maps, which present and schedule planned measures to achieve the Fisun main goals (Fisun Network 2024).

In addition to making changes at the institutional level, an important part of the success of the CAI was introducing sustainability measures to the citizens of Ii. This was done by arranging events and campaigns. Also schoolchildren were involved through teaching climate related themes at school.

Dynamics at niche level

The archetype “limits to growth” was chosen to describe this historical example level. The municipality had been successful in its aspirations of sustainability for many years. However, due to external shocks on the landscape level, which have trickled down to the regime and niche levels, the municipality’s efforts have stagnated. In fact, many interviewees representing the niche agreed that “all the easy work has been done”, and introducing further sustainability efforts would be challenging.

Ii’s efforts have been successful, and between the years 1990 - 2022, Ii has managed to cut all its greenhouse gas emissions by 12% and 27% per person (SYKE 2024). The current goals for the municipality are to decrease CO₂ emissions 80% compared to 2007 by the year 2030, increase recycling rate to 65% and halving the consumption-based carbon footprint from the 2005 level (Municipality of Ii 2024). The sectors that produce the largest amount of emissions in Ii are road transport and agriculture.

The reasoning to pursue sustainability in the first place included motivations to find a new way to attract new businesses into the area, make savings regarding energy costs. Financial struggles on the national level reflected also to the municipality’s economy. In the interviews it was described that in Ii there were initially a good number of microelectronics companies, but as they moved their businesses and manufacturing abroad, Ii had to look for a way to attract new businesses to the municipality. Therefore, the municipality leaders needed to figure out a new way to create a strong profile for the municipality that would attract new businesses.

During the late 1990s and early 2000s, some of the leading municipal politicians and municipal officials were interested in nature conservation and climate related issues and they had the window of opportunity to introduce these themes to the municipality policies. Therefore, the financial imperatives and the interest of top officials towards nature and sustainability issues made it possible for the CAI to form and act.

The measures increased steadily, but have stagnated since 2020 due to Covid-19, which made it difficult to organise events, thus reducing the sense of community. In addition, changes in national policies, such as the rise in austerity policies at the expense of climate policies.

Most of the interviewees were happy with the achievements thus far, but were slightly pessimistic about the future, as “all the easy work has been done already”. In addition, the political climate has become distinctly more conservative in Finland, the popularity of sustainability and climate action is becoming increasingly politicized, and attitudes polarized. This change of political climate on the landscape level can

translate into the results of the municipal elections next year and thus the future of the sustainability program.

CLD of niche level dynamics

<https://embed.kumu.io/9dcde529590359fd5a652e5e159a388b>

B: results → + slowing action → - results

R: results → +sustainability efforts → + results

7.3.5 Summary and Conclusion

7.3.5.1 *Origin & Evolution of HE*

The roots of the historical example go back to the end of the IT boom in Finland between 2000s and 2010s, when the municipality had to figure out new ways to make savings in energy costs and to attract new businesses into the area. Some key stakeholders within the municipality's council and the subsidiary company Micropolis were interested in environment and climate related issues and decided to try to pursue these themes as a new direction for the municipality. Pursuing carbon neutrality was a way to combine the motivations to save in energy costs and to stand out from other small municipalities. The efforts picked up pace when Ii joined two sustainability networks, called HINKU and FISU, and adopted the networks' goals of reducing carbon emissions. Since the beginning of the efforts in 2012, the municipality has managed to cut its emissions (SYKE 2024) by 22%. The current goals for the municipality are to decrease CO₂ emissions by 80% compared to 2007 by the year 2030, increase the recycling rate to 65% and halve the consumption-based carbon footprint from the 2005 level (Municipality of Ii 2024).

However, the innovation has not been without challenges. The interviewees agreed that overall, the climate action programme has been successful. However, when asked about what could have been done better, many pointed out that there should have been more space for conservative views. Improved inclusion of opposing views to the conversation from the start was seen as a solution to prevent a stronger wave of opposition later. In addition, the majority of the interviewees were happy with the achievements thus far, but were slightly pessimistic about the future, as "all the easy work has been done already". In addition, the political climate has become distinctly more conservative in Finland, sustainability and climate action is becoming increasingly politicized, and attitudes polarized.

7.3.5.2 *Organization & Activities of HE*

The collaboration between political groups became one of the most important factors for the success of the innovation. In the early days of the planning of the sustainability programme, a steering group was formed by the municipal council. The group has one member from each political group to make sure that the group's decisions would have the backing from all the political parties. The interviewees agreed that in hindsight this formation of the steering group was one of the factors that maintained consensus on the sustainability programme and ensured that the actions would remain inclusive.

Over the years, Ii has managed to engage local citizens in sustainability efforts. The main solution to this was going where the people were instead of organizing separate information events the employees of the municipality decided to go to the spaces that the citizens were already in. This included for example participating in the local citizen organizations' events and spreading information about climate activities there. This made the sustainability programme more approachable and accessible to the inhabitants of Ii.



They also introduced sustainability in schools and daycare, thus engaging children in the sustainability efforts in an educational way.

7.3.5.3 Goals & intended Outcomes of HE

The goal of pursuing carbon neutrality and sustainability was to make savings regarding energy use, develop a new profile for the municipality and commit to reducing carbon emissions.

Ii has been successful in this regard and has gained national and international attention and recognition for its efforts. Over the years, Ii has invested in green energy production, and currently has the largest concentration of wind power plants in Finland (Municipality of Ii 2025), thus generating income for the municipality (IH3). Between the years 2007 – 2017, Ii has cut its carbon emissions by 62 % (60 500 000 kgCO₂) (Municipality of Ii 2025). In addition, Ii has shared its know-how on sustainability and carbon neutrality efforts with other municipalities and regime level institutions in Finland and built a sense of community and even identity in Ii among its residents through the collective climate action. However, concerns were raised during the interviews regarding the stagnation of the sustainability campaigns and the future of the sustainability pursuits.

7.3.5.4 A multilevel perspective on the CAI using the MLP visualization

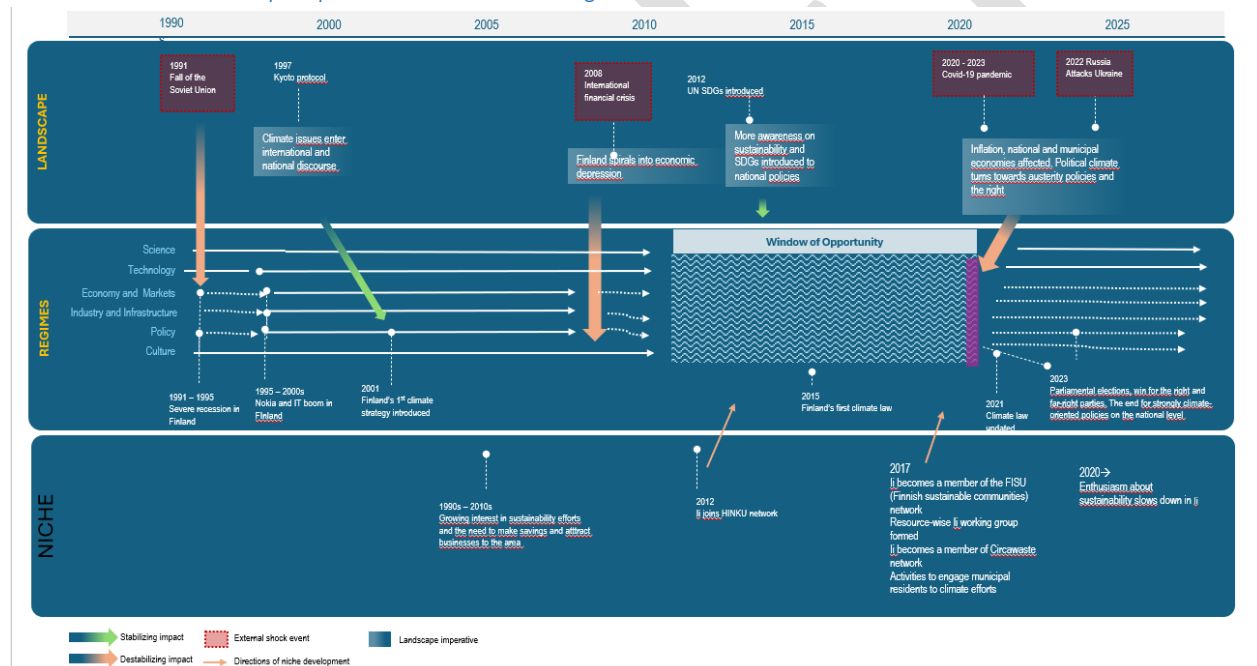


Figure 7.3.3: MLP visualization multilevel perspective on the CAI

The timeline graph demonstrates the key events of the historical example on the three MLP levels: landscape, regime and niche.

Landscape level

On the landscape level, the most important developments that influenced the initiative were climate change becoming more an important theme in international politics since the late 1990s and early 2000s. In addition, the effects of climate change had become more visible. The Kyoto protocol marked the beginning of climate themes also entering the public awareness globally. Through the Paris climate

agreement, climate change had become a major theme and collective international measures to reduce greenhouse gas emissions. In Finland the effects of climate change have been visible through heat waves, warmer winters and increased flooding (Finnish Meteorological Institute 2023).

In 2020 the Covid-19 pandemic impacted all countries in the world. In the case of Finland, the pandemic increased costs of the welfare system, Finland had to take more debt to cover all the costs (Greve et al. 2021). Economy and national debt have since then been the most important themes in Finnish politics and right-wing political parties (Raunio 2024). These themes affected the municipality of Ii, as the municipality couldn't organise events to create a sense of community around the sustainability issues due to covid. In addition, as noted also in the interviews, there was a growing lack of motivation for further sustainability measures. Another landscape level event that has impacted the political atmosphere in Finland was Russia attacking Ukraine in 2022. This shifted national policies and affected the cost of groceries and caused inflation.

Regime level

At the regime level, the main impacting developments in the sociopolitical landscape on the regime level, include the economic crises, the incorporation of climate and sustainability policies into the national strategies and development of green energy technologies and the polarisation of political attitudes.

Between the 1990s and 2010s, during which time Finland experienced recessions and rise and fall of the mobile phone company Nokia. Many Finnish IT companies started moving their offices abroad, impacting the national and the municipal economies, including Ii as well, creating the need to search for new innovations.

Another important regime development included Finland adopting climate strategies and national goals to cut carbon emissions. For instance, Finland introduced its first climate strategy in 2001 and first climate law in 2015.

Another notable development in the regime level, is the slow rise of the far-right party "The Finns" in both parliamentary and municipal elections since the 2010s. The party has a sceptical attitude towards climate change and sustainability and has become an important party in the Finnish political sphere. In the 2023 parliamentary elections, they were the second largest political party in Finland. Their attitudes have influenced the policies regarding the national climate efforts. For example, in 2024, the municipalities' obligation to draw up a climate plan per council term was overturned (Ministry of the Environment 2024)

Niche level

At the niche level, there was a need after the recession in the early 1990s and the bursting of the IT bubble to make savings and attract new businesses to the area. During the 2000s, the use of renewable energy sources increased and the first wind farms were built in Ii. Some of the key decision-makers in the municipality had the interest towards environmental themes, which led to the decision to pursue sustainability and carbon neutrality. In 2012, Ii joined the network of carbon neutral municipalities in Finland. By 2017, Ii had become a member of sustainable municipalities in Finland and arranged a wide range of activities for local residents to take part in and learn about sustainability. However, as after the pandemic and during the current austerity politics, the overall enthusiasm for sustainability has slowed down.

What kind of transition has occurred from a multi-level perspective?

The pursuit of sustainability and carbon neutrality at the municipality of Ii represents a top-down initiative, as it was started by stakeholders with access to municipal decision-making. Economic necessities were the major motivation in the background, although the interest towards nature and climate issues of some of the key stakeholders also played a role.

It was referred to in the interview that there was a shift and a momentum for green energy (IH2). In fact, climate-related issues had taken more space in national media in Finland at that time and national strategies for climate had been introduced. A momentum was created by the emergence of climate narratives on the international and national scale and the development of green energy technologies, such as wind power.

How has this transition occurred?

Economic crisis

In the background of this transition were the economic imperatives to and the need to attract new businesses to the municipality. These imperatives were the result of recessions and bursting of the IT-bubble, which led to many Finnish companies moving abroad. On the national level, Finland's economy has been on a downturn since the fall of Nokia and the 2008-2010 recession. The local level was affected by this development as well, as IT companies in the Ii area had moved their businesses abroad. Therefore, a new direction and profile was needed for the municipality.

On the regime and national level there was interest in pursuing green technology and investments had been made towards green energy. Therefore, there was momentum in the Finnish context for Ii to be among the first municipalities to pursue this direction and profile itself according to a new trend and thus stand out.

Climate imperative and rising awareness on climate issues

Over the past decades, the effects of climate change have become more and more visible, leading to international conventions and efforts to pursue carbon neutrality to curb global warming. The solutions for the climate imperative have been sought internationally by conventions and national policies. As a result of these conventions, Finland has introduced several climate strategies and put effort into the development of green technologies. Finnish municipalities have taken up climate action as well, and the majority of Finnish municipalities have introduced their climate strategies. The municipality of Ii was at the forefront of this development, as it was among the first small municipalities to conduct carbon neutrality and sustainability measures and developed local solutions to contribute to mitigation of climate change. Over time, this spilled over to innovative ways of engaging the residents of Ii as well, thus developing into collective action.

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7.4 Clean Transport Zone in Krakow (PL)

7.4.1 Interviews

7.4.1.1 Documentation of application of the method

Four relevant stakeholders have been interviewed between October 2024 and March 2025. Table 7.3.1. presents the details of their professional functions, organisations, regions, interview times and durations.

Table 7.3.1. Details on interviews

ID	Interviewee (position, function)	Investigated CAI	Date	Interview duration and type
CTZ0	Public Transport Authority of Krakow – Official	Clean Transport Zone	October 2024	122 min – online
CTZ1	Public Transport Authority of Krakow – Official	Clean Transport Zone	March 2025	75 min – online
CTZ2	Public Transport Authority of Krakow – Official	Clean Transport Zone	March 2025	45 min – online
CTZ3	Public Transport Authority of Krakow – Official	Clean Transport Zone	March 2025	30 min – online

7.4.1.2 Results

The interviews provided key insights into the factors responsible for the emergence of the CAI and the trajectory of its development, taking into account the dynamics of the relationship with social actors at the niche and regime levels, as well as the outcomes of the initiatives.

How and why did the initiative come about?

The initiative for a Clean Transport Zone (CTZ) in Krakow is related to several key factors, primarily connected with solving the pollution problem and potentially taking advantage of the new legal framework. The problem of air pollution, especially from transport, was a significant factor. *"We organised a clean transport zone in response to the problem of pollution from transport"* (CTZ1). Influential were also earlier successes in reducing low-stack emissions from households by banning the burning of solid fuels in 2019; it could also pave the way for addressing transport-related emissions. The introduction in 2018 of *"The Law on Electromobility and Alternative Fuels"* (Journal of Laws 2018 item 317; January 11, 2018) provided the legal basis for establishing clean transport zones. One of the interviewees explains that the initial idea for a clean transport zone in Kazimierz was born partly because the previous *"limited traffic zone"* faced legal challenges, and the new law offered an alternative tool. One interviewee stated that *"(...) in the meantime, a tool was created that allowed for the introduction of something like clean transport zones"* (CTZ2). The concept of clean transport zones *"entered legal circulation for the first time with this 2018 law"* (CTZ1) (Ustawa o elektromobilności i paliwach alternatywnych, 2018; Ministerstwo Klimatu i Środowiska, 2021).

The first concrete step was implementing a pilot clean transport zone in Kazimierz, making Krakow the first city in Poland to do so under the 2018 law. This pilot was intended to test the solution, although it

was not well-received by the public. One interviewee suggests that the Kazimierz zone *“was also intended to ‘calm traffic’ and create a space that functions similarly to a restricted traffic zone, especially given the heavy tourist traffic before the COVID-19 pandemic”* (CTZ2). The first initiative of the clean transport zone was focused on promoting electric vehicles: Battery Electric Vehicles - (BEVs) and Plug-in Hybrid Electric Vehicles (FCEVs), according to the original version of the law. This, however, may have led to the public perception that only electric cars would be allowed in the city. In the later stages of the CTZ's development, this implicit assumption was publicly clarified (Kraków City Office, 2022; PSPA, 2023).

What kind of transformation was attempted, and how has the focus of the initiative changed over time?

The first attempt at transformation focused on introducing restrictions based on vehicle emissions to improve air quality, with a particular emphasis on promoting electromobility among businesses. However, the initiative's emphasis has evolved significantly over time, particularly in response to the challenges they faced. The first attempt, exemplified by the Kazimierz pilot, was to use emission standards as criteria for vehicles to enter a designated zone. One of the interviewees explains that the initial clean transport zone was *“aimed at electric cars (...). This was linked to the broader goal of developing electromobility in Poland, in line with the vision of the government of that day”* (CTZ1).

Emerging public opposition to the initial, strongly “pro-electric” approach to vehicles led to a change in viewpoint. *“Later (post-2019) versions of the Clean Transport Zone initiative, as discussed by other interlocutors, moved toward broader emission standards (Euro Standards) and more gradual implementation (...) with longer transition periods for residents”* (CTZ3). This indicates a shift away from promoting only electric vehicles to a broader strategy of reducing overall vehicle emissions over time. The same informant notes that *“the prepared resolution is more targeted at residents”* due to *“much longer transition periods for residents”* (CTZ3). The geographic scope of the planned zone has also expanded from the initial idea of an area within the fourth ring road to the administrative boundaries of the entire city. This change, according to one interviewee, *“may also have affected the fate of the resolution”*. (CTZ3). Greater emphasis was placed on public awareness and education. Over time, there has been greater emphasis on communicating the purpose of the Clean Transport Zone and addressing misinformation. Another interviewee stresses that *“efforts to combat the association”* (CTZ1) that clean transport zones are only about promoting electric cars and raising public awareness of the differences between low emissions and greenhouse gas emissions are important (Kraków City Office, 2023).

Does the initiative reflect its contribution from a sustainability/climate change perspective, and if so, how?

The initiative demonstrates its contribution from a sustainability perspective, particularly concerning air quality, and to a lesser extent, acknowledges the broader context of climate change. The primary way the initiative reflects its contribution to sustainability is through its direct aim to improve air quality by reducing transport-related pollution.

The goal is *“primarily to improve the air we breathe”* (CTZ2). The initiative targets vehicles with higher emissions, intending to create a cleaner environment within the city. The initiative's communication efforts have contributed to a greater public understanding of the environmental impact of vehicle emissions. This shift in public perception reflects the initiative's contribution to environmental awareness, a key aspect of sustainability. It is important to note that while the primary sustainability focus of the CTZ in the transcripts is on local air quality (reduction of pollutants such as particulate matter and nitrogen

oxides), the broader issue of climate change (CO₂ emissions) is acknowledged as a related but distinct concern. The reduction of polluting vehicles, while primarily aimed at improving local air quality, can also have indirect benefits for climate change by gradually reducing the overall number of combustion engine vehicles on the road.

All interlocutors, however, stressed that the goal of the CTZ (as communicated by the authorities, local government officials and NGOs alike) is to reduce emissions from transport rather than to achieve full decarbonisation of the individual transport sector.

What makes this CAI a niche – e.g. does the CAI (niche) fulfil a shielding or empowering functions

The Clean Transport Zone can be viewed as a niche under certain conditions. Initially, it represents a specific and often local intervention within a broader urban mobility system. In the context of Krakow, the early implementation of this measure (the first in Poland, one of the first in Central and Eastern Europe) was driven by the strong involvement of actors originating from urban movements. The innovation developed and adopted by officials of the Public Transport Authority in Krakow had a major impact on the development of such transport policies in other Polish cities (Warsaw, Wrocław).

As stated in one interview (CTZ0), *"The CTZ experiment in the Kazimierz district in 2019 was actually one of many different activities related to transport in Krakow. All these new solutions distinguished Krakow and were a pilot solution for the transport system on a national scale."* This quote suggests that it was seen as a pioneering activity and not a mainstream approach, even at the early implementation stage.

Based on the information gathered, it can be concluded that the CTZ, as an intersection between local and state administration supported by numerous NGOs, is an activity that simultaneously performs shielding or empowering functions for the system.

The CTZ can be seen as a protection for the interests of the residents, including all those travelling in the city, by protecting them from the negative effects of transport-induced air pollution. By limiting access to more polluting vehicles, it also aims to mitigate conflict between different categories of city users (visitors vs residents). Here, CTZ activities fulfil functions reserved for the regime and fit in with changes in trends dominating the landscape. CTZ often operates within the existing regulatory "regime" and is enabled by it. The transcriptions mention the "Law on Electromobility and Alternative Fuels" as the legal framework for CTZ implementation, indicating that the initiative works within the framework of established regulations and partly tests their operation. In addition, alignment with the "Air Protection Program for the Małopolska Province" reinforces existing environmental policy goals (Ustawa o elektromobilności i paliwach alternatywnych, 2018; Urząd Marszałkowski Województwa Małopolskiego, 2020).

How is the initiative's relation to mainstream society?

The relationship between the CTZ and mainstream society seems to be complex and multifaceted, characterised by interaction, negotiation and evolving public perception. The initiative included several stages of public consultation, indicating an attempt to engage the mainstream society in Krakow, understand their concerns and gain broad public acceptance. One interviewee (CTZ2) recalled that the initial points of consultation were *"difficult"*. Fluctuations in public opinion and the need for effective communication are key aspects of this relationship. In addition, difficulties in *"public understanding due to confusion between low emissions and carbon emissions"* were pointed out (CTZ1), highlighting the

communication challenge with mainstream society. The implementation of the CTZ has become interwoven with political relations over time.

The CTZ was *“pulled onto political banners”* (CTZ2), illustrating how it became a topic in mainstream political discourse, as it was referred to by politicians and opinion makers in mainstream media. The perception of the CTZ as a *“social exclusion zone by some politicians”* (CTZ3) highlights points of tension with segments of mainstream society. It is the media (traditional and new) that play a significant role in shaping public perception and mediating the relationship between the CTZ initiative and mainstream society. One interviewee emphasised the *“great responsibility that journalists bear for accurately explaining the complexities of the CTZ”* (CTZ1) and combating disinformation. Evidence of the connection with mainstream discourse can also be found in the emergence of opposition groups not rooted in local life in Krakow. The first CTZs have also become an attractive topic of political dispute at the national level. In addition, the issue feeds into various parallel discourses, such as those related to automotive culture (Polish Smog Alert, 2023).

7.4.2 Textual Analysis

7.4.2.1 Documentation of application of the method

The methodological approach applied in the textual analysis concerning the Clean Transport Zone (CTZ) in Krakow involved a comprehensive examination of 16 sources, encompassing official documents, media communications, reports from public consultations, and statements from stakeholder organisations. The analysis aimed at capturing both the explicit (manifest) and implicit (latent) content to understand the evolution and dynamics of public discourse around the initiative. The textual corpus comprised various documents related to the CTZ initiative, including policy frameworks, public consultation reports, stakeholder statements, media articles, and publications from academic institutions. Sources included official city council resolutions, governmental reports, publications from environmental organisations, industry associations, and other local opinion leaders.

Specific examples included reports by the Polish Alternative Fuels Association (PSPA), Frank Bold Foundation, Krakow City Council resolutions, and statements by Krakow Smog Alert and other environmental NGOs. A stakeholder analysis was conducted to identify primary and secondary stakeholders involved in the discourse on CTZ. The primary stakeholders identified included transport authorities (Krakow Public Transport Authority (ZTP)), environmental organisations (Krakow Smog Alert, European Climate Foundation, Clean Air Fund), industry associations (Polish Alternative Fuels Association) and local residents and businesses, who were less visible in mainstream discourse but represented through consultation reports and local forums (Frank Bold Foundation & Polish Ecological Club, 2019; PSPA, 2019, 2022; Kraków City Office, 2022a, 2022b; Municipality of Kraków, 2022; Polish Smog Alert, 2023; Institute of Environmental Protection – National Research Institute, 2023).

Textual analysis focused on identifying relevant phases of the CTZ initiative and the thematic framework, positioning stakeholder discourse, and tracking changes from scientific argumentation through policy-making processes to social and political disputes. The method applied revealed the contentious nature of sustainability transitions, showing how the initial consensus on environmental goals evolved into significant polarisation and public contestation as the CTZ moved from niche innovation to mainstream policy implementation.

7.4.2.2 Results

The analysis of the texts related to the debate on the Clean Transport Zone showed that the key stakeholders were political decision-makers, transport authorities, environmental organisations, economic actors, residents and opposition groups. Political decision-makers, especially the Mayor of Krakow, the Ministry of Climate and Environment and the Krakow City Council, mainly presented dialogue-oriented or neutral positions, focusing on regulations and implementation of city policy.

Transport authorities, especially the Krakow Public Transport Authority (ZTP), played an important role in the practical implementation of the policy. Environmental organisations such as the Krakow Smog Alert, the Clean Air Fund and the European Climate Foundation consistently welcomed the initiative, calling for strengthening environmental protection measures. The reactions of economic entities were mixed. The Polish Alternative Fuels Association (PSPA) supported sustainable mobility, but some parts of the industry were critical of tightening emission regulations. Residents and local social groups were noticeably less visible, and their voices were limited mainly to public consultations, without a stronger participation in mainstream political discourse (Polish Smog Alert, 2023; PSPA, 2023).

Opposition groups, such as the Otwarta Wieliczka Association, initially less visible, gained importance over time, especially during the implementation phase of the CTZ. The narrative about the CTZ evolved: in 2018–2019, discussions by experts and environmental organisations focused on air quality and compliance with EU standards dominated, and the Ministry of Climate and Environment created the legislative basis for the Act on Electromobility and Alternative Fuels. In 2020–2022, the Krakow City Council officially adopted the CTZ regulations and began public consultations, moving the topic to the urban mobility strategy and socio-economic analyses. In 2023–2024, the implementation of the CTZ received strong opposition from informal groups and small entrepreneurs. The discussion became polarised, emphasising the economic consequences and potential negative effects on small businesses and individual freedoms. From this point on, it can be seen that CTZ attracted both opponents and organised groups lobbying to uphold this resolution of the City Council (Ustawa o elektromobilności i paliwach alternatywnych, 2018; Kraków City Office, 2022).

Opposition groups actively used the media, turning the CTZ into a significant political issue. In the latent content layer, the CTZ discourse gradually evolved in terms of power relations, semantic fields and stakeholder classifications: initially, the dominant discourse was environmental and regulatory, in which NGOs and decision-makers were perceived as experts; in the middle phase, the discourse included urban mobility and development issues; in the last phase, the narratives became strongly politicised, emphasising the contrast between “ecological transformation vs. economic burdens” and “overregulation vs. climate responsibility”. Opposition groups presented themselves as economically disadvantaged by policy, while the environmental organisations emphasised climate responsibility and public health. The media played a key role in promoting specific narratives, initially amplifying the ecological argument and later giving more space to the anti-CTZ postulates (Polish Smog Alert, 2023; PSPA, 2023).

The stakeholder landscape reflected broader social and political changes, from niche environmental lobbying to a political dispute at the centre of public debate. Methodological reflections point to the necessity of including a random sampling of media, including social media, in order to better understand the dynamics of social discussions around CTZ.

7.4.3 Social Network Analysis

7.4.3.1 Documentation of the application of the method

The data collected to reconstruct the social networks describing the linkages between the main CTZ stakeholders came from several stages of work with HE. The main source of information was the material collected as part of the analyses conducted in the first iteration (Deliverable 1.2). Subsequently, the data were supplemented and verified through in-depth interviews with HE stakeholders. The drawing of the inter-stakeholder map was also aided by information obtained from the context analysis.

In the case of the CTZ, the key actor around which the narrative is built was identified as the Public Transport Authority (PTA -SH11_Public_Transport_Authority_of_Krakow), which led the CTZ incubation process through the active involvement of several of its specialists. For this reason, we categorised this actor as a representative of a niche. However, there is an actor overseeing the PTA on behalf of the city mayor, and this is SH6_Deputy_Mayor_for_City_Infrastructure. This endorser, despite their proximity to the PTA, was recognised as a representative of the regime (Kraków City Office, 2022a; Municipality of Kraków, 2022).

7.4.3.2 Results

The diagram below (Figure 7.4.1) shows an analysis of the relationship between those stakeholders identified as part of the niche. The diagram classifies these stakeholders according to their nature (cooperative, neutral, conflicting or absent) and, by means of line thickness, indicates the intensity of the relationship (weak, medium or strong). The topography of the niche diagram shows the social network formed around the idea of a CTZ between 2016 and 2023. These stakeholders are mainly public administration, representatives of entrepreneurs (here, entities such as the Chamber of Crafts, Market Boards, Taxi Drivers are combined), research centres, citizens, NGOs, civil society organisations and the media.

At the niche level, we can identify three to four main nodal actors: Public Transport Authority of Krakow (PTA – SH11); local media (SH24); Krakow Smog Alert (SH3) and residents of central districts of the city (SH12), who together with representatives of entrepreneurs in Krakow (SH23) are the main addressees of the regulations resulting from the introduction of the CTZ (Polish Smog Alert, 2023; Kraków Chamber of Commerce, 2022).

Importantly, PTA (SH11) appears as an actor steering the development of the CTZ, and its central position is also due to the fact that its representatives had a voice in the qualitative research (in-depth interviews, IDI). It is this actor that most often interacts with others, but is also involved in the highest number of conflicts. From the diagram, we can therefore see that the opponents to the implementation of the CTZ in Krakow were primarily representatives of two niche municipal organisations (SH9 and SH19) and some representatives of entrepreneurs (SH23). However, it should be noted that this was a heterogeneous group, and many of them cooperated constructively in the broad public consultation (2018 test in the Kazimierz district, pre-consultation in July 2024, and main consultation from November 2024 to January 2025). Some, however, declared an attitude of protest (during this period, SH23 and SH9 were active critics of the district's entry restrictions).

One of the key actors on the map of CTZ initiation and implementation was the Krakow Smog Alert (SH3), together with its supporting (SH20) and cooperating (SH7, SH22) entities. This organisation, founded in 2012, is in fact a leader in the fight for clean air, not only in Krakow but also nationally. After the successes

related to the ban on solid fuels in Krakow (effective from 1 September 2019), it has supported the activities of actors in the fight against transport emissions. The Krakow Smog Alert is in cooperation with many organisations working on sustainable transport. The niche diagram covers just a few of them: the Polish Environmental Club (SH20), the Coalition of Doctors and Scientists for Healthy Air (SH22) and cycling activists (SH7) (Polish Smog Alert, 2023; Institute of Environmental Protection – National Research Institute, 2023).

The role of local media (SH24) is important in shaping discourse around CTZ. Some of them, working with NGOs (SH3) and experts (SH22), supported the PTA (SH11) in guiding the process. Local media were also accessed by CTZ opponents (SH19 and SH9) and protesting residents (SH12), making this actor (SH24) a platform for both cooperation and conflict in relation to the PTA (Kraków City Office, 2022a; PSPA, 2022; Miasto Jest Nasze Association et al., 2024).

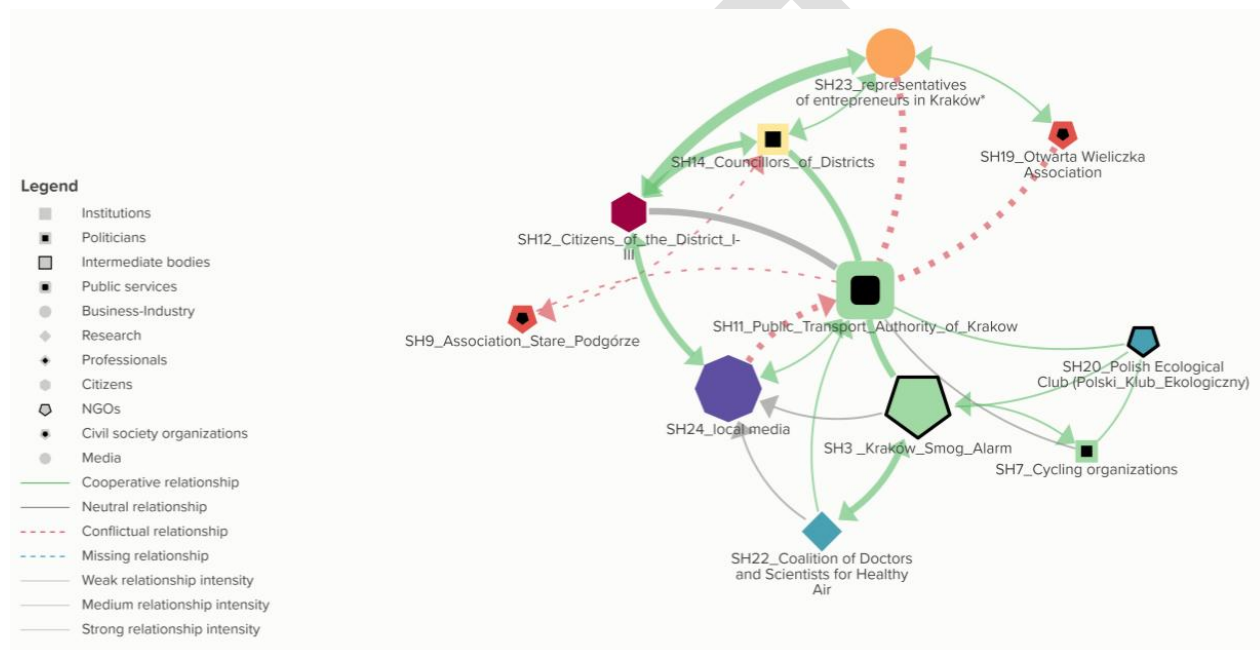


Figure 7.4.1: Network mapping of the Clean Transport Zone initiative at a niche level, Poland

The next diagram (Figure 7.4.2.) shows the mapped HE CTZ stakeholders, which were assigned to the “regime” category in the course of the research proceedings. Two central nodes can be identified here: Deputy Mayor for Transportation, Infrastructure and Utilities (SH6) and the Ministry of Climate and Environment (SH8) (Municipality of Kraków, 2022; Institute of Environmental Protection – National Research Institute, 2023).

In the case of the Deputy Mayor for Transportation (SH6), this is a crucial role because it is the one that sets the main directions for the development of transport policy in Krakow and supervises offices such as the Public Transport Authority. In the period 2017–2025, three officials held this position. All of them pursued transport policies aimed at establishing the CTZ (Kraków City Office, 2022a; Kraków Chamber of Commerce, 2022).

While in the early stages (2018–2022) of the incubation of the CTZ, there were no entities actively opposing transport policies regulating pollution from transport in Krakow, from around 2023, we see the entry of

the CTZ topic into the mainstream at the local, regional, but also national level (Polish Smog Alert, 2023; PSPA, 2022).

From the beginning of 2023, Krakow saw the emergence of the “Nie oddamy miasta” initiative (nieoddamymiasta.pl, English: “We won't give up the city”). Although the organisation describes itself as a civic organisation, it is one of the projects of the NGO Piotr Skarga Association (SH18). This organisation states that it “has taken the nurturing of the Christian values and traditions of the Polish people as its main goals of public activity” and has no previous experience with either transport or urban activism. The “Nie Oddamy Miasta” initiative (SH18) organised residents' protests against the establishment of the CTZ, actively criticised the Mayor's decisions (SH6 and SH1), and persuaded city councillors (SH15) to change resolutions (Miasto Jest Nasze Association et al., 2024; Kraków City Office, 2022b).

In the case of the Ministry of Climate and Environment (SH8), it was the body co-responsible for preparing the assumptions of the Act of January 11, 2018 on electromobility and alternative fuels (the Ministry of Infrastructure and the National Fund for Environmental Protection and Water Management also participated in the work. This law (along with several amendments: December 2, 2021; March 10, 2023; November 21, 2024) was crucial for CTZ in Krakow as it allows municipal councils (including Krakow's – SH15) to enact such regulations (Sejm of the Republic of Poland, 2018; Ruczkowski, 2023).

When creating the legal framework, the Ministry (SH8) was in contact with the mayors of cities responsible for transport (SH6). Two organisations associated with the promotion of electromobility (SH16) and alternative fuels (SH17) were active as partners in the consultation of the legal framework for the CTZ. Meanwhile, these two organisations were supported at an early stage by the Clean Air Fund (SH10), which also supported the International Council on Clean Transportation (SH5) (PSPA, 2019; PSPA, 2022; Institute of Environmental Protection – National Research Institute, 2023).

In the Public Transport Authority, many employees are recruited from among graduates and associates of the Cracow University of Technology (SH2). Researchers from this university often act as experts in consultation meetings on the CTZ. At the final stage of negotiations on the shape of the CTZ, a key partner representing the interests of people travelling from neighbouring municipalities to the city is the Krakow Metropolis Association (SH21), which cooperates with the mayor of the city (SH1) (Kraków City Office, 2022b; Municipality of Kraków, 2022; Institute of Environmental Protection – National Research Institute, 2023).

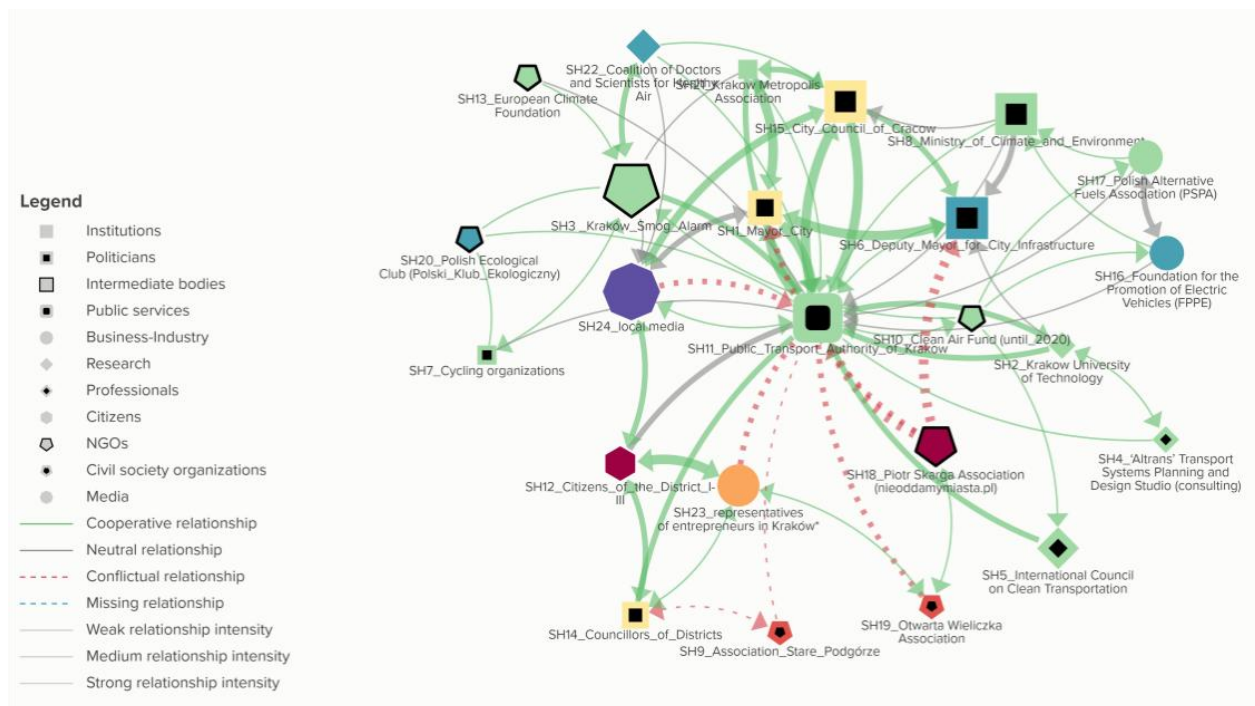


Figure 7.4.3: Network mapping of interactions between niche and regime actors, Clean Transport Zone, Poland

7.4.4 System Mapping

7.4.4.1 Documentation of the application of the method

The Causal Loop Diagrams (CLDs) presented in this section were developed based on the data and information collected during the text analysis and in-depth interviews (IDI). The analysis of the data was able to identify the key factors influencing the processes shaping the Clean Transport Zone in Krakow at both the niche and regime levels and enabled the reconstruction of the logic of relationships between elements.

In the case of CLDs, the interviewed stakeholders did not have the opportunity to review predefined diagrams, as was the case for the SNA and MLP.

The result of the analytical work was the creation of diagrams visualising the causal relationships and relationship dynamics between key factors in a complex system at the niche and regime levels, and between these levels. The landscape level was not included in the CTZ model.

7.4.4.2 Results

Regime level

The issue at the regime level that led to the development of HE was primarily the entry into force of the 2018 Act on Electromobility and Alternative Fuels. The development of legislation at the regime level in line with EU objectives authorised local governments to create Clean Transport Zones, which led to niche developments such as the CTZ pilot project in Kazimierz district, in Krakow. The policy implemented by the government was focused on the idea of developing the electromobility market as a development opportunity in which Poland could gain a foothold as a manufacturer and supplier. The trends reflected in the above regulation are in turn the effect of European policies on transport decarbonisation and global

changes in the automotive market. However, these dynamics are the subject of the landscape and will not be discussed in this section.

Pattern of key factors at the regime level

Poland took the first steps towards low-emission transport through key political initiatives. In 2016, it launched ElectroMobility Poland to build its own market potential for electric vehicles. Co-financed by state-owned energy giants, the company introduced Izera EV prototypes in 2020 and began construction of a factory in Jaworzno in 2024. A key legislative event was the 2018 Act on Electromobility and Alternative Fuels. The Act aligned Poland's transport policy with EU goals, promoting the adoption of electric vehicles, expanding alternative fuel infrastructure, and enabling local governments to create Clean Transport Zones. These measures aim to reduce greenhouse gas emissions, improve air quality and accelerate the transition to sustainable mobility (PSPA, 2019; Sejm of the Republic of Poland, 2018; Ruczkowski, 2023).

The graph below (see Figure 7.4.4.) shows NO₂ levels in the period preceding the introduction of the Clean Transport Zone. Its implementation (currently planned for July 1, 2025) will enable an assessment of the effectiveness of the CTZ in reducing NO₂. However, the graph shows that Krakow was the first to take action, despite the fact that nitrogen oxide pollution was not the highest compared to other large cities (Katowice/Warsaw/Wrocław). This means that intervention is not being undertaken in a city where the problem of NO_x content is not the greatest, which encourages further search for contributing factors (Polish Smog Alert, 2023).

In addition, the graph clearly shows the downward trend in emissions of these compounds during the COVID-19 pandemic, which is related to the limited mobility of residents. However, what is crucial is that at none of the measurement locations did the average NO₂ values meet the currently applicable standard, which is 40 µg/m³. In addition, it is assumed that the forecast requirements of the Clean Air For Europe (CAFE) directive are 30 µg/m³, and the WHO recommendation is 10 µg/m³. This means that the current state of the air in Polish cities does not meet any standards. This state was the subject of a supplementary report by the Supreme Audit Office entitled "Actions to Reduce Urban Traffic Pollution" in 2024 (Polish Smog Alert, 2023; Supreme Audit Office, 2024).

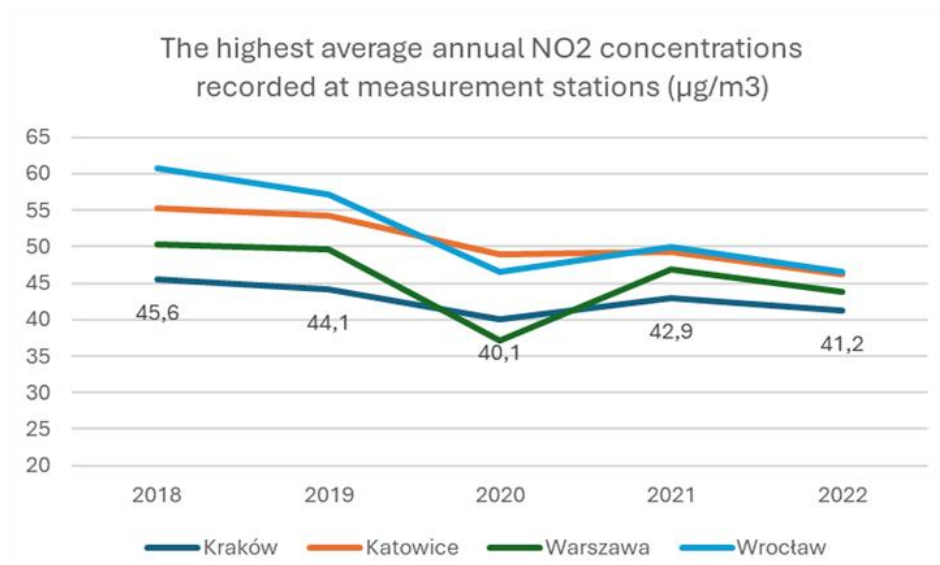


Figure 7.4.4: Pattern 1 Air pollution in selected cities in Poland

Source: Supreme Audit Office based on Chief Inspectorate for Environmental Protection data (Najwyższa Izba Kontroli 2024).

Dynamics at the regime level

The cause-effect dynamics at the regime level that explain the development of the Clean Transport Zone in Krakow are multifaceted, but new legislative dynamics are identified as the primary factor here. One key dynamic is the enabling role of national legislation. The 2018 Act on Electromobility and Alternative Fuels stands out as a key element of the regime-level actions. The Act aligned Poland's transport policy with European Union goals by actively building demand for low-emission vehicles. Most importantly, it authorised local governments to create Clean Transport Zones (Sejm of the Republic of Poland, 2018; Piatek, 2019; PSPA, 2022).

Changes to national environmental regulations occurred due to growing concerns about the very poor air quality in cities like Krakow and the associated health effects. Growing public awareness, driven by research and the activities of environmental groups such as Krakow Smog Alert, put pressure on the national government to introduce stricter environmental regulations. These changes at the national level created an opportunity to introduce local regulations to improve the environment, such as the eventual ban on burning solid fuels in Krakow (Polish Smog Alert, 2023; Institute of Environmental Protection – National Research Institute, 2023).

This example of the institutional-legal relationship between the regime and the niche (local smog and central government) is a consequence of two reforms introduced in Poland: the 1990 local government reform (municipalities gained legal personality, their own budget and the ability to elect their own authorities); and the 1999 local government reform (a new three-tier territorial division of the state) (Ruczkowski, 2023).

The cause-effect loop (see Causal Loop Diagram Figure 7.4.5) for CTZs represents a system in which climate and environmental policies related to emissions of greenhouse gases and particulate matter from transport can exert pressure to establish new Clean Transport Zones in large cities. These policies can also

include the acceptance (setting) of air quality standards (including NO₂). Greater deviations from the norm impact on the attractiveness of policies such as CTZs (Polish Smog Alert, 2023; Supreme Audit Office, 2024).

However, this pressure can be counteracted by political and institutional resistance in cities to CTZs and by changing political dynamics in Poland, showing increasing support for parties that oppose such policies. At the same time, the changing level of public acceptance of the introduction of new CTZs can be influenced by these political and policy pressures (Miasto Jest Nasze Association et al., 2024; Kraków City Office, 2022b).

A change in public acceptance of the idea of CTZ may directly reduce the pressure from city authorities to implement them (see loop B2). It may also influence long-term electoral decisions and, for example, strengthen parties that oppose the transformation of the transport system in the entire regime (see loop B1) (Institute of Environmental Protection – National Research Institute, 2023; PSPA, 2022).

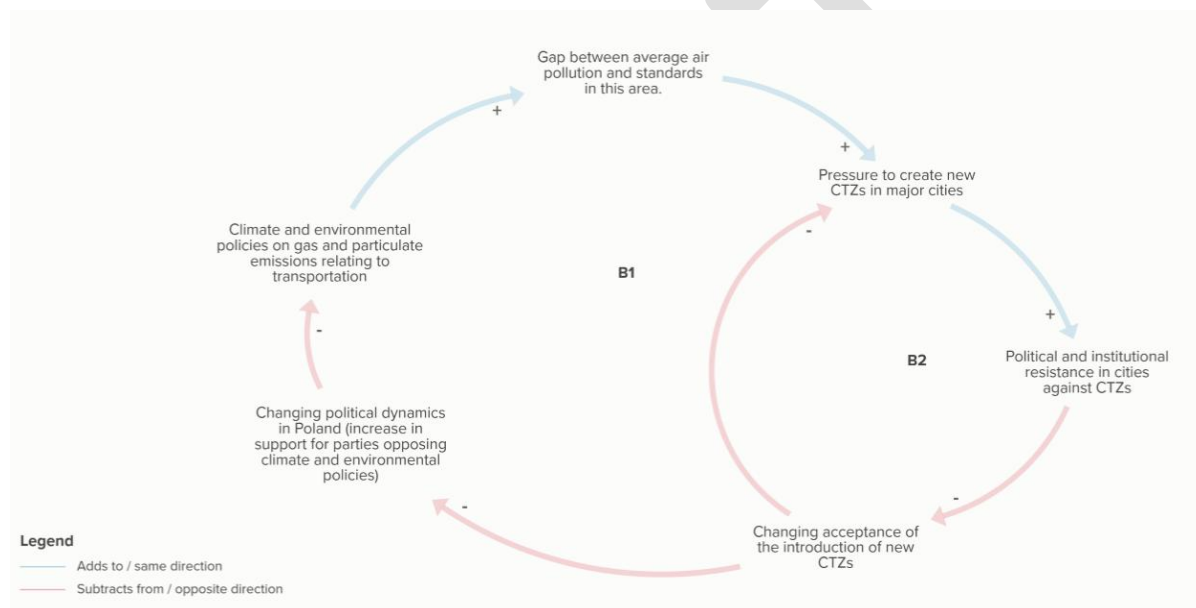


Figure 7.4.5: Causal Loop Diagram 1: Basic dynamics of CTZ factors in Krakow at the regime level
[Link to Kumu with CLD \(CTZ regime level\)](#)

Niche level

The Clean Transport Zone initiative pursued the goal of reducing air pollution and promoting sustainable transport in order to act upon the empowerment granted to local governments by the 2018 Act on Electromobility and Alternative Fuels, a regime-level legislative development. The aim of the CTZ was, first and foremost, to continue the process of air quality improvement initiated by the ban on burning solid fuels in households in Krakow. In order to designate a CTZ, high awareness of the state of air quality and prioritisation of its improvement in the opinion of residents are necessary. Only general awareness of the importance of the topic of air quality gives legitimacy to policies such as the CTZ (Sejm of the Republic of Poland, 2018; Polish Smog Alert, 2023; Institute of Environmental Protection – National Research Institute, 2023).

Patterns of key factors at the niche level



Throughout the period analysed (survey data collected between 2015 and 2024 – see Figure 7.4.6.), there were mostly negative perceptions of air quality. Positive and neutral ratings remained relatively low during this period. From 2015 to 2018, the prevailing attitude toward air quality was negative, starting at around 70% and rising to around 80%. During this initial period, both positive and neutral ratings remained low. Starting in 2020, there was a significant change, marking a potential turning point. Negative ratings began to show a clear downward trend. At the same time, the positive rating began to show a more consistent increase. Importantly, this trend continued until 2022 to make the share of positive evaluators equal the percentage of negative evaluations of the state of air quality in the last measurement (2024). The percentage of neutral evaluators remained steady at 28% in 2024. Undoubtedly, the resolution to ban solid fuel burning, which took effect on September 1, 2019 (the end of the coal and wood boiler replacement program), was responsible for the dramatic increase in air quality ratings. However, the dynamics of air quality assessments in recent years (2022–2024) suggest that the increase in satisfaction, however, has reduced its dynamics, and further air quality improvement should be sought (Polish Smog Alert, 2023; Kraków City Office, 2022a; Institute of Environmental Protection – National Research Institute, 2023).

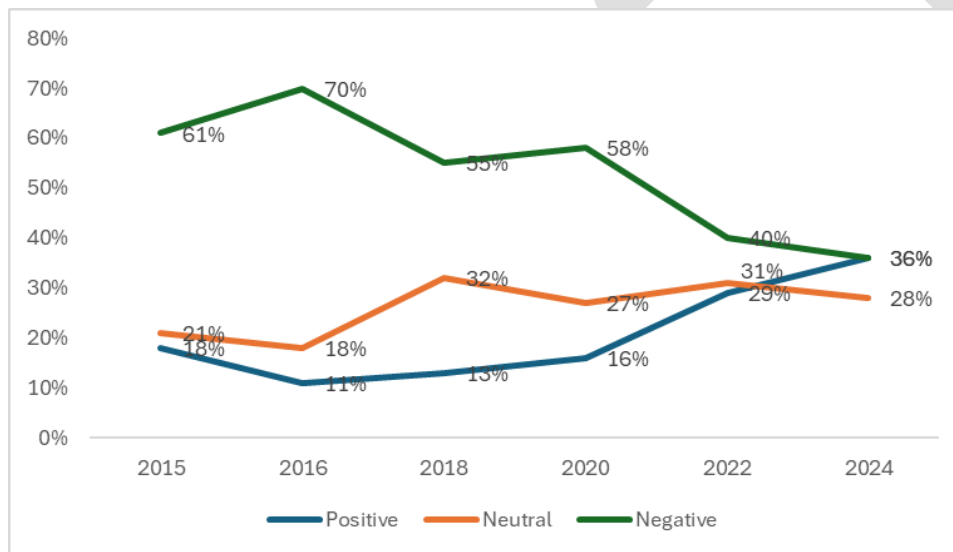


Figure 7.4.6: Pattern 2 Dynamics of air quality assessment in Krakow
Source: Own elaboration based on “Barometr Krakowski 2015–2024” (Krakow City, 2025).

The perceived importance of air quality as a problem in Krakow remained remarkably stable and high throughout the 2015–2024 period (see Figure 7.4.7.), consistently oscillating around 90%. This indicates a continued and widespread recognition of the importance of air quality as an important problem. Significantly, even despite the marked improvement in Krakow's air quality recorded in 2022–24, the importance of this aspect of life in the city was indicated by as many as 86% of respondents in the last survey. In the 2020 and 2022 waves, this question was not asked. In the “Barometr Krakowski” (English: Krakow Barometer) surveys, respondents were asked to select the aspects of living in Krakow that are currently most important to them from the previously mentioned list. They could indicate a maximum of 3 answers. The percentage of respondents who indicated “air quality” as important was high in all years, ranging from 16% to 31%. Starting at around 18% in 2015, it experienced some fluctuations before showing a noticeable increase around 2018, reaching around 30%. This increase in priority coincides with the peak in negative assessments of air quality observed in the first chart, suggesting a possible link between

negative perceptions and the urgency to address the problem. After this peak in 2018, the perceived priority of air quality showed a downward trend, decreasing to around 16% by 2024. This decline in priority, despite the consistently high importance, may indicate that while the importance of air quality was still recognised, it may have become a less urgent priority compared to other problems. In the latest edition of the survey, cost of living (32%), the labour market (30%), health (22%) and transport (21%) were more important issues according to respondents (Polish Smog Alert, 2023; Kraków City Office, 2022a; Institute of Environmental Protection – National Research Institute, 2023).

Pattern 3. Dynamics of importance assessment (validity and priority) of air quality in Krakow

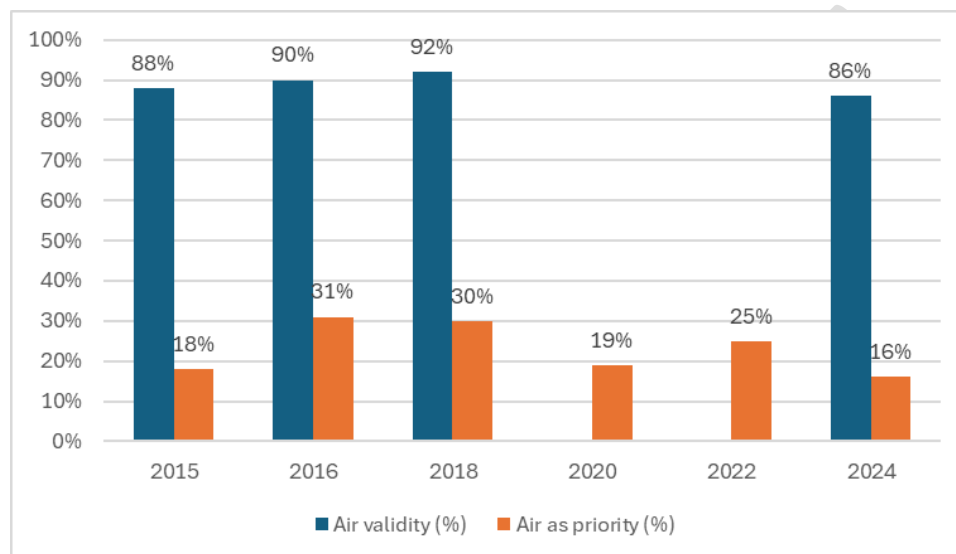


Figure 7.4.7: Pattern 3 Dynamics of importance assessment (validity and priority) of air quality in Krakow
Source: Own elaboration based on “Barometr Krakowski 2015–2024” (Krakow City, 2025).

The perception of air quality in Krakow, as reflected in the “Barometr Krakowski” surveys between 2015 and 2024, reveals consistently negative perceptions among residents. Dissatisfaction with the air quality has been a prominent feature throughout this period, indicating a persistent concern for this environmental aspect of living in the city. While there might have been minor fluctuations from year to year, the overall trend suggests that a significant majority of Krakow's residents have consistently expressed dissatisfaction with the quality of the air they breathe, underscoring the ongoing challenges related to air pollution. On the other hand, satisfaction levels with air quality have remained notably low across all the surveyed years, further emphasising the enduring nature of this problem for Krakow's residents (Polish Smog Alert, 2023; Kraków City Office, 2022a).

Another factor influencing the costs associated with individual transport (cars) in Krakow is the growing popularity of the car as a means of transport (see Figure 7.4.8). As can be seen in the three waves of the “Kompleksowe Badania Ruchu” study in 2013–2018, we see the growing popularity of journeys made by private car and the growing popularity of the bicycle as a means of transport. This is happening at the expense of public transport (bus/tram) and walking (Kraków City Office, 2022a; Institute of Environmental Protection – National Research Institute, 2023).

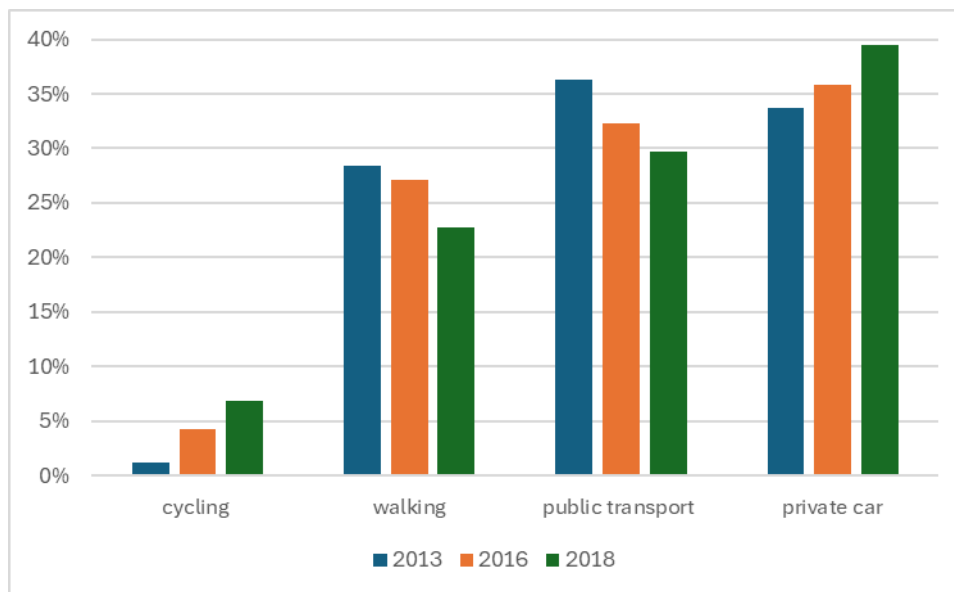


Figure 7.4.8: Pattern 4 Means of transport in the journeys of all Krakow residents
Source: Own elaboration based on Urząd Miasta Krakowa (2018).

Dynamics at the niche level

The CLD of the CTZ niche illustrates (see Figure 7.4.9.) the complex interaction of transportation and environmental factors, where the change in the number of registered individual vehicles leads to more car trips, which in turn contributes to traffic congestion. This greater use of cars tends to affect emissions, resulting in more air pollution. This, in turn, may trigger air quality alerts (media reports) and impacts on public awareness of the air quality problem. In addition, the higher cost of maintaining and operating cars can affect the number of registered vehicles, potentially reducing the number of car owners and users. This dynamic can also affect the legitimacy of politicians' actions on new transport regulations and is linked to overall satisfaction with the city's transportation system (Kraków City Office, 2022a; Polish Smog Alert, 2023; Institute of Environmental Protection – National Research Institute, 2023).

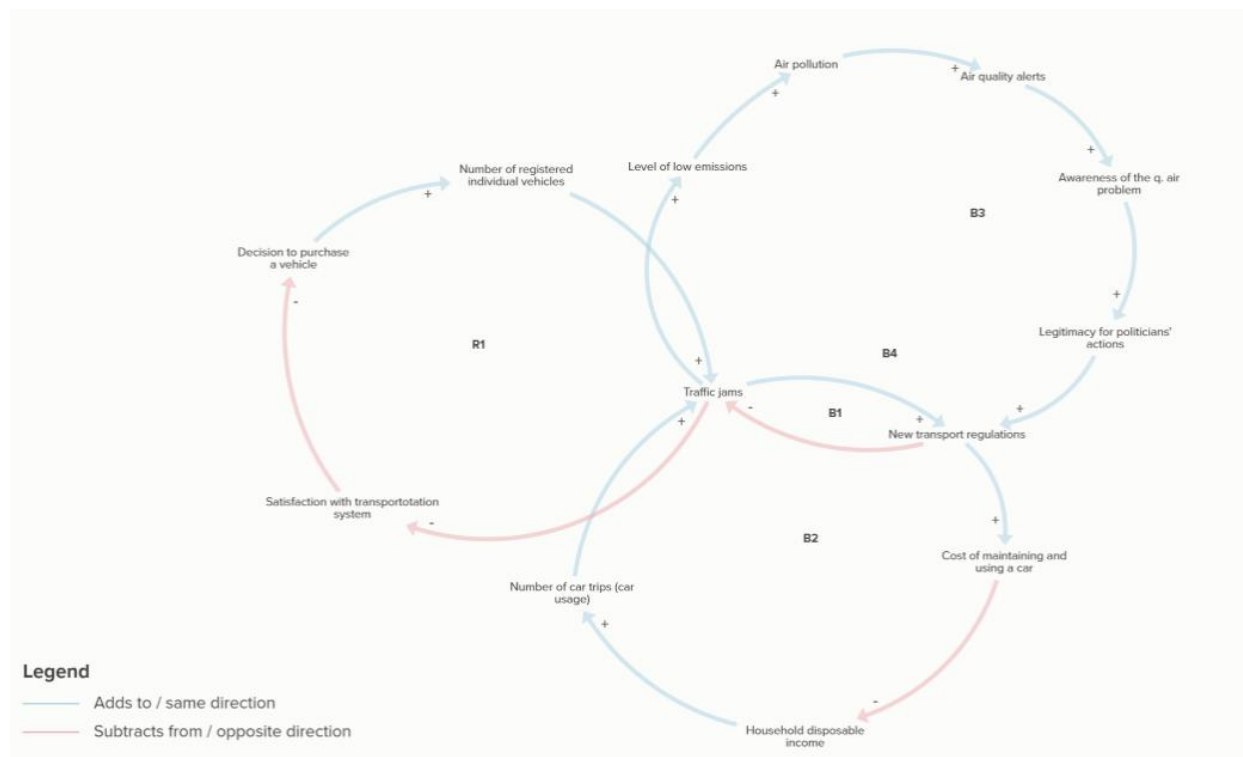


Figure 7.4.9: Causal Loop Diagram 2 Basic dynamics of CTZ factors in Krakow at the niche level
[Link to Kumu with CLD \(CTZ niche level\)](#)

7.4.5 Summary and Conclusion

7.4.5.1 Origin & Evolution of HE

The proposal for a Clean Transport Zone in Krakow arose mainly as a reaction to the major issue of air pollution caused by transportation. Following previous achievements in decreasing low-stack emissions from private households by prohibiting solid fuel combustion in 2019, the CTZ sought to tackle emissions associated with transportation.

A crucial element that facilitated the CTZ was the enactment of the national "Law on Electromobility and Alternative Fuels" in 2018, which established the legal foundation for creating such zones. This legislation synchronised Poland's transport strategy with EU objectives and encouraged the implementation of electric vehicles and alternative fuel facilities (Sejm of the Republic of Poland, 2018; Płatek, 2019; PSPA, 2022).

Krakow became the first city in Poland to implement a CTZ with a pilot project in the Kazimierz district in 2019. This initial pilot was intended to test the policy objectives. It was also aimed at reducing traffic and creating a space similar to a restricted traffic zone, especially given the heavy tourist traffic before COVID-19. The initial focus of the CTZ, according to the original version of the law, was on promoting electric vehicles (BEVs and FCEVs) (Frank Bold Foundation & Polish Ecological Club, 2019; PSPA, 2019).

However, the CTZ initiative and its focus evolved significantly over time, particularly in response to challenges like public opposition. The early, strongly "pro-electric" approach led to a public perception that only electric cars would be allowed in the zone. Later versions of the initiative (post-2019) shifted towards broader emission standards (Euro Standards) and more gradual implementation, including longer

transition periods for residents. At the same time, it was decided to spatially expand the CTZ to cover the entire municipality of Krakow and affect all residents equally. A stronger focus was also put on public awareness and education to tackle misinformation and clarify the initiative's aim (Kraków City Office, 2022a; Municipality of Kraków, 2022; PSPA, 2022)..

The CTZ's evolution shows a transition from a niche innovation driven by environmental goals and supported by experts and policymakers to a mainstream policy implementation marked by significant polarisation and public contestation. The discussion moved from being mainly environmental and regulatory, where NGOs and policymakers were seen as experts, to covering urban mobility. Finally, the discourse around the CTZ became politicised and proposed changes began to be described with a bipolar fork: environmental versus economic burden and over-regulation versus environmental responsibility.

7.4.5.2 *Organization & Activities of HE*

The CTZ initiative in Krakow involves a complex network of stakeholders operating at both niche and regime levels. Key actors at the regime level include political decision-makers such as the Deputy Mayor for Urban Infrastructure, the City Council, and the Ministry of Climate and Environment. These actors generally held dialogue-oriented or neutral positions and focused on regulations and implementation. The Deputy Mayor for Transportation directed the city's transport policy and oversaw the Public Transport Authority (ZTP), which played a critical role in practical policy execution. Although the ZTP operated at the niche level, it had a significant influence and was often involved in conflicts (Municipality of Kraków, 2022; Kraków City Office, 2022a).

Environmental organisations like Kraków Smog Alert, the European Climate Foundation, and the Clean Air Fund supported the CTZ and pushed for more ambitious environmental measures. Kraków Smog Alert, in particular, was a recognised leader following earlier successes in banning solid fuels (Polish Smog Alert, 2023; Institute of Environmental Protection – National Research Institute, 2023).

Residents and citizens' initiatives were less prominent in public discourse, though they participated in consultations. Protesters emerged as active players later in the process. Opposition came from groups like "Otwarta Wieliczka", "Nie Oddamy Miasta," which increasingly politicised the CTZ, using media to amplify dissent. The media itself played a dual role—initially supporting ecological arguments, then shifting to highlight opposition views. Journalists were seen as key to explaining the complex issues involved. Research institutions such as the Cracow University of Technology contributed expert insights during consultations (Miasto Jest Nasze Association et al., 2024; Kraków Chamber of Commerce, 2022; Institute of Environmental Protection – National Research Institute, 2023).

Activities within the CTZ initiative ranged from developing national legal frameworks and city-level resolutions to implementing pilot projects and conducting public consultations, which initially faced challenges. Communication efforts aimed to counter misinformation and raise awareness, while political tensions grew as the initiative became a contentious issue. Operating within an existing regulatory regime, the CTZ aligned with policies like the Air Protection Program for the Małopolska Province. Its relationship with the public remained complex, marked by fluctuating opinions, communication challenges, and claims made by some political opponents regarding social exclusion (Urząd Marszałkowski Województwa Małopolskiego, 2020; Kraków City Office, 2022b; PSPA, 2022).

7.4.5.3 Goals & intended Outcomes of HE

The primary goal of the Clean Transport Zone initiative was to enhance air quality in Krakow by decreasing emissions from high-polluting vehicles. This was an extension of earlier initiatives that started with the prohibition of solid fuels, leading to a notable improvement in air quality. Building on the success of this policy, the CTZ focuses on protecting public health and raising awareness of the impact of pollution. Public support and understanding are seen as essential to the legitimacy of the initiative. The increasing politicisation of the CTZ at local, regional and national levels makes this task more difficult for its leaders (Polish Smog Alert, 2023; Frank Bold Foundation & Polish Ecological Club, 2019).

While the CTZ originally aimed to promote electromobility, especially for businesses, it has since transitioned to wider emission regulations and a more gradual strategy. Additional goals involve reducing traffic, developing a cleaner urban environment, increasing public awareness of vehicle emissions, and gradually decreasing the reliance on internal combustion engines. Although the initiative aids in addressing climate change, its primary emphasis continues to lie in local air quality (Institute of Environmental Protection – National Research Institute, 2023; PSPA, 2022; Kraków City Office, 2022a).

The authorities emphasise that the CTZ aims to reduce transport emissions rather than completely decarbonise individual transport. The project also aims to reduce tensions between residents and visitors by limiting access for more polluting vehicles. Implementation faces challenges related to resistance from politicians, shifts in public opinion, and the increasing popularity of cars (PSPA, 2019; Miasto Jest Nasze Association et al., 2024).

7.4.5.4 A multilevel perspective on the CAI using the MLP visualization

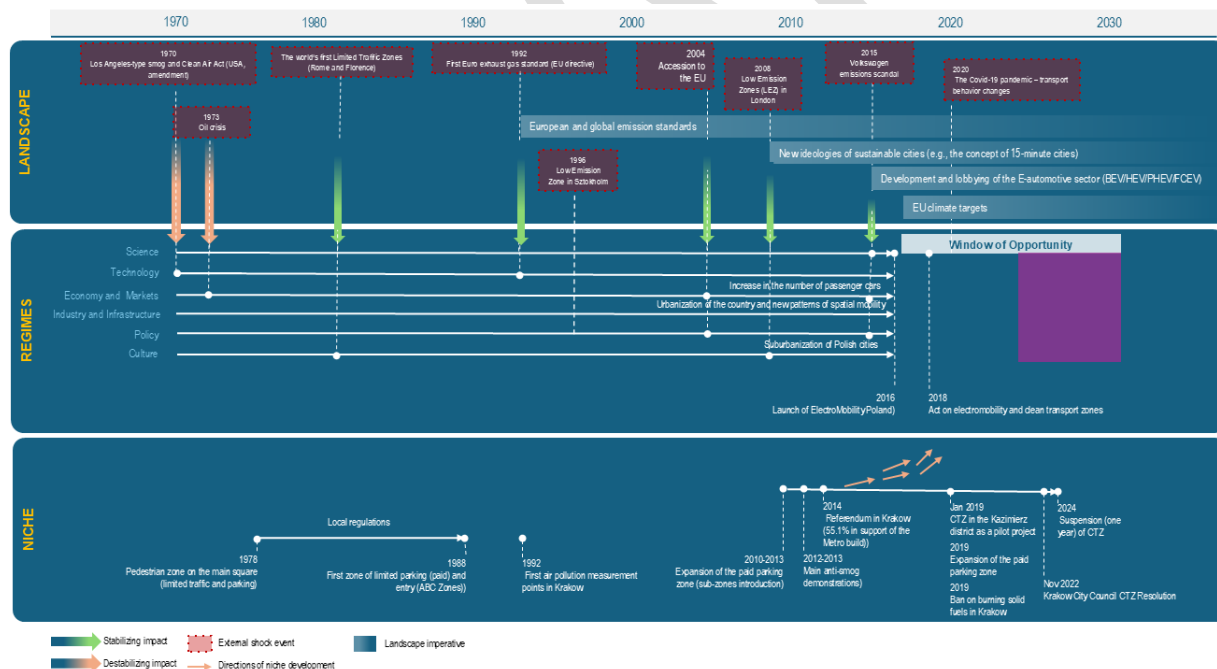


Figure 7.4.10: MLP visualization: Multilevel perspective on the CAI

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7.5 Green zones for recreation and community spaces in Tartu County (EE)

7.5.1 Interviews

7.5.1.1 Documentation of application of the method

Table 7.5.1 List of interviews

Nr	Interviewee (position, function)	Investigated CAI (organization, country)	Date	Duration and format
1	Two representatives of Tartu municipality (Urban Planners)	Tartu municipality, Estonia	June, 2024	2 h, in person
2	Leader of local community garden	Tartu municipality, Estonia	October 2024	1 h, virtual
3	Socially responsible entrepreneur	Tartu municipality, Estonia	October 2024	1 h, virtual
4	Tartu municipality's representative	Tartu municipality, Estonia	September 2024	1 h, in person
5	Active resident of Raadi, a yoga teacher	Tartu municipality, Estonia	September 2024	1 h, in person
6	Tartu municipality's representative	Tartu municipality, Estonia	September 2024	1,5 h virtual

7.5.1.2 Results

How and why did the initiative come about? What kind of transformation was attempted, and how has the focus of the initiative changed over time?

Raadi is a case which is still very much in development – the connected community is taking off extremely slowly, and the area is still very much a contested ground for real estate developers, town and municipal councils and governments, and important local players, such as the Estonian National Museum, etc. As it is a new area, whilst other neighboring communities are settled and active, Raadi does not have a central community building yet to bring permanence to the community life, and no active and steady leadership. Furthermore, the **area is rather large, and the inhabitants have not yet settled**. As it is close to Tartu where activities and services are plentiful, people have not acquired a habit of seeking activities and most of the services in the area itself, which causes less of both offered in the area.

Most of the **communication takes place on social media platforms** (mainly a Facebook group for the residents) and there is some activity around other **common institutions and locations** – e.g library, parks, school buildings etc. However, resident-initiated community events happen in “older” neighbouring communities - midsummer day, *Teeme ära!* - a neighbourhood cleaning tradition in springtime, home cafes etc, rather than in Raadi, which remains separated and different. Raadi has had some grander scale events in the municipality, but those (*Raadi Elamus!* - a festival for Raadi and other neighboring communities, a few concerts, *Muinastulede öö bonfire night*, outdoor movies, *Kunstitee* (Art Road which led through Raadi as part of Tartu 2024 European Cultural Capital events)) **have been organized by the local government's culture specialist** along with the real estate developers and with a few Raadi activists, all of them trying to activate the community. As was mentioned in the interviews, real estate developers and some of the municipality's representatives have a fruitful cooperation in the area. Developers' motivation lies in the rising value of the real estate in Raadi while the municipality hopes to find co-thinkers

and co-doers, also financial and material support in the projects meant for the current and future residents. Local people have been invited to take part but not given much shared responsibility.

At the bottom of the issue of the disconnected community, there seem to be two main problems – **limited nature of communication and a lack of physical space** for the community. People discuss community matters in smaller groups and various events happen also in different places and locations. There is no regularity or built-in pathways yet who to talk to and where to go. One of the main reasons behind settling with these circumstances is the closeness of Tartu city - residents come to Raadi often for the better real estate prices yet keep their children going to school in Tartu. In addition, they find their stores and entertainment in Tartu as well.

There are currently no active leaders in Raadi. Creating and leading a community from the outside does not work either; indeed, one of the town municipality workers admits that “Pushing does not work in a new community” (int 4). Yet the new and active residents who have initiated something feel that **local government shows interest only in the beginning**, but has neither the specific knowledge or know-how for community building nor care enough to follow through the birthing phase, so that the community would start acting independently.

Although both CAI and municipal representatives view green thinking and action as a way to bring the community together, the emergence of an active and vibrant community has not yet occurred. *“There is no community who would greet you and no community to go to visit”*. (int 5) According to a municipal specialist, there are no NGOs, nobody applies for funds for supporting events that would come from the community: *“People go to Tartu for everything”*. (int 4) However, one larger event and a few smaller ones, which were organized by the municipality together with the real estate developers over the last years did connect people and activated some. Nevertheless, Raadi area is a concern for the local government because there is no active and continuous leadership to move things along for the community. A municipality's specialist concludes in her interview: ***“My experience is that Raadi people do come along if something cool is planned!”***. (int 4) According to the interview with a Raadi resident, neighboring older communities' residents consider Raadi people to be “city folks” due to their closeness to Tartu, a few events in Raadi also had more participants from the city for the same reason. Raadi is standing out from the other (older) communities in the municipality by getting somewhat more attention and resources from the local government currently, which is causing some resentment from the residents of the older communities.

In what way do sustainability objectives play a role for the aims and activities of your initiative; did you intend to have an influence on these fields? How does the initiative reflect its contribution from the point of view of sustainability / climate change?

The local government hopes to foster a sense of community through green initiatives—planting trees and bushes, cleaning up the area, and planning improvements together. However, these efforts have remained largely one-sided, with the local government acting as the main initiator and bringing residents together for isolated events. So far, this approach has not led to the deeper, sustained shift in community engagement that is needed.

One of the few activists in Raadi area is aiming to **initiate a community garden** which the local government was very supportive of to start off with. The activist sees this as a shift in attitudes as the government increasingly supports grass-root level initiatives. Yet, after the initial support, there has been no further

interest by the local government. Without supporters, the leader struggles. However, the initiators in the area have plans for events, such as a **large fair and gatherings to discuss various opportunities in Raadi** on how to get the community going. The initiator of the community garden in Raadi sees the need to identify what people care about deeply, and considers sharing ideas leading to solutions. The leader is hoping for a more cooperative approach for the grass-root level initiatives by the community, where local government would follow the interests and needs of people, care enough to ask, what do they need, what do they care about and would pay attention and possibly support these ideas.

What makes this CAI a niche – e.g. does the CAI (niche) fulfil shielding or empowering functions (deriving from theory of niche as free social spaces). How is the initiative's relation to mainstream society (if necessary, also include info from questions regarding initiative's objective)

The niche can be classified as potentially evolving but not at all matured. One of the interviewees was a yoga instructor and an active community member in Raadi. She has held regular yoga classes in the neighbourhood for nearly 20 years, yet the community around her has not grown any bigger or gotten smaller either. She dreams of a more active community in Raadi area, but does not seem to believe in the possibility of it happening in the near future: *"Most people in Raadi are so engaged in their own lives and problems that there is no time to be active in the community, sometimes no time to even think about having a community - people have multiple jobs just to get by."* (int 5) She also claimed that the feeling of community is totally lacking in the apartment building neighborhoods in Raadi: *"People just say hello, if that".* (int 5)

In her work, the interviewee **finds it hard to engage new people** in the area to join her yoga group. She has regularly tried to engage new people through the Raadi residents Facebook group, yet its **content is managed by two administrators** who independently decide which content to publish and which to reject – in her words, her yoga classes tend to be classified as commercial and profit oriented, so as such, more often than not, her posts are turned down. She also regrets that the local newspaper is not in sync with the people and the timeline of events. Although the newspaper is meant to be monthly, and "everyone reads it", **the timing of this newspaper** being printed (at the end of the calendar month) is unfavorable, sharing info on activities with no time for people to join these activities.

One interviewee believes that, to this day, most events in the Raadi area are organized by the local government rather than initiated by residents themselves. This might explain why many locals choose not to participate. A sense of unfamiliarity is reflected in the following comment: *"I feel like everyone is a stranger. I assume most people taking part would be from the older generation, but I don't really know... it's possibly a biased assumption."* (int 5)

One of the community activists has helped to establish an outdoor gym, service centers, and several other essential local amenities. These efforts are thoughtful and well-organized, carried out in collaboration with various partners—particularly sports organizations that share the same vision and support the local active community.

The municipality does not oppose the more active people but does not support them strongly either. The activists do not necessarily expect this, rather, they are grateful not to be jarred. **"Creating consistency with the municipality is difficult and depends on political risks as everything changes with every new government, but this is inevitable"**. (int 3) It appears that **there is little or no dialogue** between local

government, residents and other stakeholders. Some initiatives have been nipped in the bud by the municipality, such as the attempt to create a joint graffiti art project for a tunnel in Raadi. Although the innovative idea came from the local people, the municipality rejected it as they were concerned about difficulties to clean up after. One of the entrepreneurs described their experience with the local government in their interview, saying that the local government is not acting against them, but their actions could not be called supportive either. In their own words: *“In my endeavors, I’m glad if LG is not stopping me, but I’m not really hoping for any kind of co-operation, definitely not for support.”* (int 3)

Something similar could be concluded in the following dynamics with Terminal service centres on landscape level: in all Estonia they will act locally as **crisis centres if needed in the future**, they would constitute the first places for the community to get help as they are equipped with the necessary technical and practical stock. However, currently there is no particular support from or cooperation with the national government. For example, the Rescue services have contracts with other energy corporations by default. For some activists, these crisis centers are vitally important, and the entrepreneurs themselves see this as part of giving back to the society and preparing for crises at the same time.

7.5.2 Textual Analysis

7.5.2.1 Documentation of application of the method

There were fewer articles on the area and activities there than expected. In the end, seven articles out of about 20 that could be clearly identified were used for analysis, chosen for their discursive significance and expressiveness. Almost all the articles were in the local rather than national media. This gives the impression that Raadi is a peripheral area being developed in a somewhat peripheral region – despite the fact that it actually surrounds one of the most central historic institutions in the country, Estonian National Museum, and is located in the second largest city, the most important university town of Estonia. It was also a struggle to identify articles which would go beyond information and architectural competition or real estate development descriptions, and very few had opinionated, discursively significant messages.

The articles did not lend themselves to easy interpretation regarding CAI as they are all still describing merely the creation of the conditions for CAI’s emergence, rather than an actually established CAI. The contested futures that are emerging from the articles cannot clearly be interpreted as calls to action either. Nevertheless, the articles offered interesting material for analysis and further clarified the nature and features of the case, as well as the surrounding context and processes.

7.5.2.2 Results

Meta-data

The majority of the **voices** are those of the Raadi municipality – the municipal mayor, culture worker, architect, as well as some voices from the city government. Architects and city artists are also frequently present with their visions for the future. These voices dominate the mediascape with their topics (real estate, architectural plans). There are no voices from the niche; people from the niche are only referred to, and the references are mostly to the passivity or lack of presence of people from amidst Raadi inhabitants themselves.

The Raadi “community” is often spoken of, yet both the community itself and its representatives are conspicuously absent. The article that directly addresses the community describes it as “anonymous” and largely passive—a recipient of events organized by others. Even “the active members of the community”

are portrayed passively, as they are said to have had no contact with the municipality. This framing implies that they are not “active” in the way that would be considered useful or relevant by the municipality.

The Raadi “community” is represented primarily as a potential—one that much of the reported activity and planning is directed toward. However, this potential is also portrayed as fragile, threatened by unfavorable developments, such as the area becoming a “sleeping district” with little to no daytime life. This notion of potential is the dominant call to action: Raadi is presented as a frequently contested space where the likelihood of meaningful community development could increase or diminish over time.

The potential for CAI is largely articulated by municipal and city administrators and politicians. They envision Raadi either as a sustainable, vibrant, and “supercool” district, or as a hub of maximum business development. While some municipal or city representatives believe that strong business presence alone is enough to foster an active community life, others disagree.

This contested vision is also where the tension between territory and land ownership unfolds. Some of the land is owned by the city, some by the municipality, others by private individuals or real estate developers. While certain land-use decisions have already been finalized, leaving no room for appeal, others remain open to change.

One of the implied but not necessarily directly addressed calls to action is also the emergence of the community. It is something that seems often in the wings but never quite capable of emerging. The potential, however, is not denied, just that there is not much to report on in this regard, as yet.

The attention and focus around Raadi have shifted depending on which stakeholders or interest groups have gained influence in the planning process. Most commonly, Raadi appears in the media in connection with architectural competitions, or more generally because it is “in development”, either as a contested space or as an area being acted upon. These competitions have also introduced themes such as sustainability, green lifestyles, community development, and participatory decision-making — topics that have only gained prominence more recently, around 2022.

There is a gradual shift toward presenting Raadi as fertile ground for an emerging community. However, even by 2023, the so-called “active members of the community” are still portrayed as relatively anonymous and passive.

One of the residents interviewed shared insights into the two most commonly used media platforms among locals: the Raadi residents’ Facebook group and the local newspaper. The interviewee, a yoga instructor, expressed frustration over the difficulty of attracting new members to her regular yoga sessions. She has frequently tried to promote her classes through the Facebook group, but its content is moderated by two administrators who independently decide what gets published. According to her, her posts are often rejected because the classes are seen as commercial and profit-oriented.

She also voiced disappointment with the local newspaper, noting that it doesn't align well with the residents' needs or the timing of local events. Although the paper is intended to be a monthly publication and is widely read, it typically comes out at the end of the calendar month — too late for residents to join activities that have already taken place. This background demonstrates the constraints that direct the media content, curbing its ability to serve local interests as well as the particular ways in which the media content is directed by implicit restrictions applied by the media administrators.

The topic is not particularly **visible** being mostly part of local media (Tartu section of national newspaper Postimees, mostly in real estate sections, or municipal newspapers).

Manifest content

Although the way Raadi has been discussed has evolved—shifting primarily between visions of it as a business-oriented district on the outskirts of Tartu and as a community with its own identity and center around which residents could gather—these discussions have largely remained at the regime level and have not entered the media as niche discourses. Stakeholders are involved both as parties interested in land ownership and, to some extent, as representatives of different future visions. These range from a "business-as-usual" model, where people visit the area primarily as consumers of goods and services in shopping or entertainment centers, to more progressive ideas of a sustainable, community-oriented population seeking alternative, eco-conscious ways of living.

In earlier coverage, these competing potentials were sometimes presented side by side. Over time, however, the sustainability-focused vision has become dominant, while the consumption-centered narrative has largely disappeared from media discourse. This shift does not seem to stem from a change in who is discussing the area, but rather from concrete changes in how the city and municipality have chosen to manage its development. Real estate developers are now more constrained, expected to operate within the goals and frameworks set by local governments

Latent content

In the 2000s until 2019, the area is mostly a contested ground for differing development visions. Since 2022, the shift appears to be towards sustainable community aims. There are no clearly competing narratives—media coverage between 2006 and 2019 presents a fairly uniform view of the conflicts in the area. Since then, the focus has shifted toward developing Raadi as a sustainable, community-centered district. Articles increasingly highlight different visions of sustainability and make more frequent references to community activists. The early articles also bring in the threat of the area becoming a clone of the Soviet era sleeping districts which is presented as a potential problem resulting from lack of vision/planning. The way in which the term "community" has come into the picture is not reflected on - the articles refer on the one hand to "developing the community" and on the other "anonymous community". It is simultaneously something that appears to already exist, as well as something that is yet to be created.

7.5.3 Social Network Analysis

7.5.3.1 Documentation of application of the method

Interviewees did reflect that the changes in the politics on the regime level bring along sudden rotations in the perspectives and the expectations change towards the niche along with the assumptions of the other stakeholders aligning as well. This social network analysis draws upon data obtained through interviews and textual analysis.

7.5.3.2 Results

Influence and power in the network

The most powerful actors in the network are the (1) Local government as a whole (2) local government's representatives (architect, cultural specialist, planners etc) (3) the real estate developers/entrepreneurs and (4) the single activists from the niche as they are blazing the trail for the much longed for community.



The reason for mentioning the **local government** and **the representatives** separately in the reflection is the now and then occurring tangle within the regime dynamic. For example, local government's architect gave a permission for one of the initiatives, a community garden creation, to start off from a small plot of a land on the main (Pärna) street in between the apartment buildings, to support the initiative and Raadi community's overall progress, but down the road, after the initial allowance, no one from the government was curious or kept track of their endeavor. Another example, a cultural specialist was in a strong support of **an initiative** from Estonian Academy of Arts students's (who also is a resident of Raadi) original plan to use Raadi tunnel-walls as a graffiti design project, but the local government and the planning department "turned on the red light", to quote the representative, and the reasoning from the power organ was, that "it will be hard to clean afterwards", again quotation from the interview. This is an interesting example of how a seemingly very small red light or "no" could potentially stop a lifetime of commitment to a community from happening and, in doing so, to keep that social capital as a resource separated from the neighborhood. Those and a few other similar incidents point to a lack of unanimous vision or agreement on how things are done or what is the aim exactly in this department. Single representatives catch the vision of a new perspective of a strategic community development, but overall the purpose of these steps are forgotten or underestimated. **This factor clearly affects the development of the niche and seems to be the main element of the early deaths of this sort.**

The support system of the rare CAIs in Raadi niche has developed over time, with substantial life force and input from representatives from the local government having gone long ways to meet the people half-way and bring support along. For instance, the municipality's cultural specialist has organised a few bigger gatherings for the residents and one major event with activities and performances. In her own words, if she gets to, she has preferred to use Raadi vast green space and their anonymous and disconnected community for those ideas to start to change the situation slowly but surely.

What makes some of the local government's representatives influential (e.g. the cultural specialist) are the resources they put into the CAI (time, knowledge, work, strategic thinking, lobbying efforts) and their strong cooperative relationships, especially with the other influential actors like **real estate developers and entrepreneurs**, who then again have invested their time, their energy and money into the endeavors. However, despite their high influence, they have been much less visible than the planners and the local government.

Conflict and tensions within the network

Most of the relationships towards the CAIs are **cooperative**. However, only a small part of these cooperative relationships are **strong**, while the others are of **medium** or **weak** intensity. Some of the relationships are **conflictual** or **partly conflictual** and influenced by another stakeholder.

While local government and real estate developers in Raadi have been and are acting cooperatively towards each other, there is a hidden resentment within the dynamic as well. Private developers have been the main actors driving the process of new construction (land mostly in private ownership) while the local government has been developing a strategic vision and providing the public services and infrastructure. Both parties have win-win goals in their minds, uniting the strengths and aiming to accomplish together what could not be done separately, but there is also a distinguishable competition element in the mix.

Private developments and capital gains were supported by the general framework of neo-liberal planning regulations and strategies. On the one hand, negotiations between the local government and private developers on developing social and green infrastructure have become more successful over time. Tartu municipality development plan 2022-2030 (2024) and the new zoning plan from 2022 became clearer manifestation of agreed strategic spatial vision between stakeholders and of integrated development principles (designating the networks of infrastructures, green areas, recreation zones, social infrastructure, and by setting stricter conditions on the use and construction of the planning area).

On the other hand, there seems to be competition of some sorts. For example, one of the developers mentioned in their interview that the local government is not acting against them but their actions could not be called as supportive either.

Also, there are a few conflictual aspects to the media scenery. According to the interviews, the local newspaper serves the interests of the local government first and foremost, while entrepreneurs in their own words get to the printed newspaper's pages through the paid advertisement only without much of an exception. To add the comment of one of the interviewees, then Raadi residents Facebook group's administrators (there are two of them) are not entirely objective either in their selection of what to pass through the filter and publish and what to keep back from the page.

Niche maturation and development

The main Window of Opportunity occurred around 2015-2018, when new participatory initiatives were led by the local government to develop green areas by engaging residents - construction of public parks, playgrounds, community and education centers. The same time period was an important phase of building place-identity and moving towards a local community, even though it was (and still is) reliant on single activists. According to the interviews, the support of the regime at that time was strong and relationships cooperative, but overall, the changes in the politics bring along sudden changes in the perspective and the expectations towards the niche, which aligns with other stakeholders as well.

Most visible missing or/and weak relationships seem to be between the residents of Raadi. Community with stronger ties can build trust at a faster pace and maturation of the niche could be accomplished in a short time. Given Raadi's unique context, characterized by its vast spatial layout, slow-paced community development, and the absence of a shared physical center, stronger interpersonal ties among residents could have fostered greater levels of trust and mutual support. In such a setting, neighbors would be more inclined to assist one another, contributing to enhanced social cohesion, a stronger sense of belonging, and the formation of a collective neighborhood identity. This, in turn, could lead to increased local engagement, reducing reliance on nearby Tartu, or generally, on commercial and outside-of-community solutions for daily needs. Additionally, a tightly-knit community would likely benefit from a heightened sense of safety through informal social control, as well as improved information flow within the area — whether through small social networks or broader community interactions.

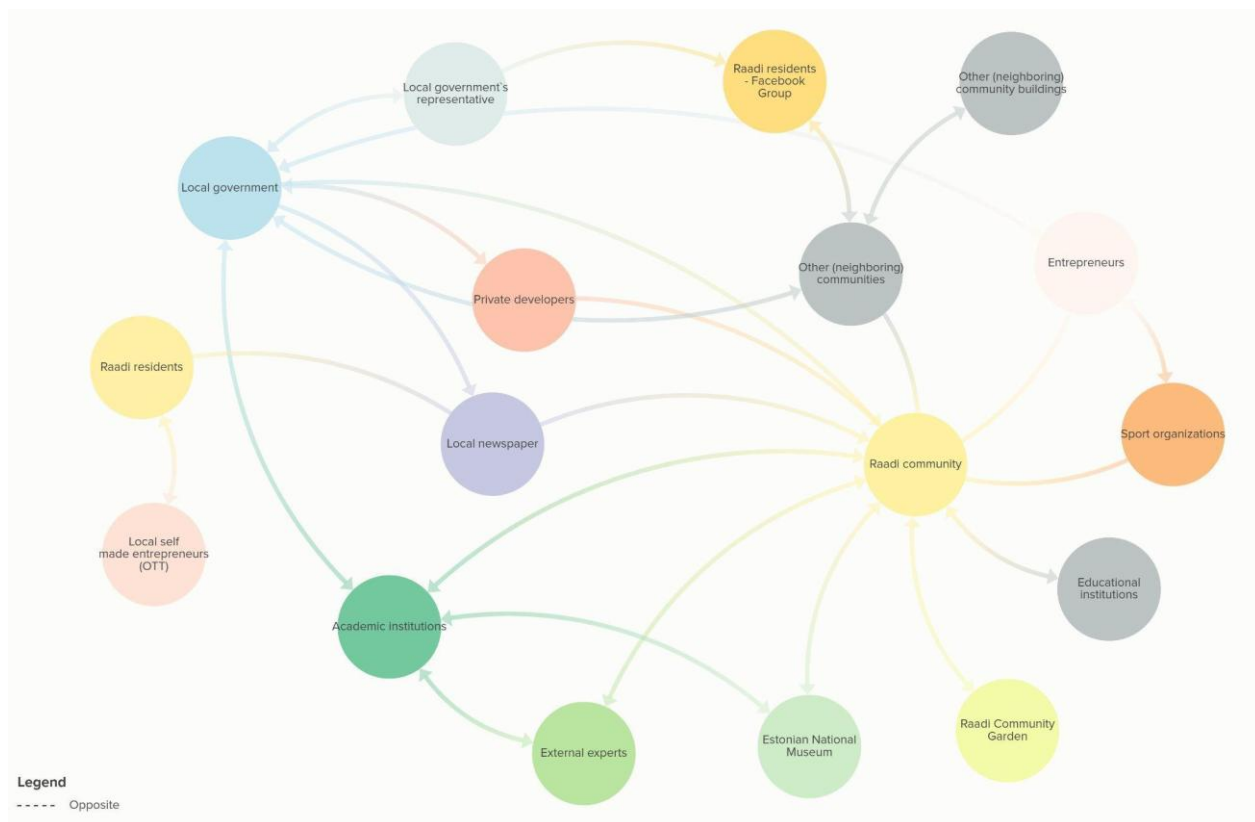


Figure 7.5.1: Mapping of the network

7.5.4 System Mapping

7.5.4.1 Documentation of application of the method

Documentation of the Method

The system mapping method has provided another view to the historical examples. It was conducted after the semi-structured interviews and the SNA, which offered valuable input to frame the system mapping method.

7.5.4.2 Results

Regime level

Regime level issue that led to niche development(s):

Raadi green space is a case which is still very much in development, the area is a still somewhat contested ground for real estate developers, town and municipal councils and governments and local important players; the area is rather large and the inhabitants have not yet settled, and the closeness of Tartu is another important influencing factor.

How have the patterns evolved/changed over time? What led to these developments? What happened at certain turning points?

Historically, the Raadi area was primarily industrial land, with the military airport dominating the landscape during Soviet times. The local government envisions transforming Raadi into a unique district featuring large green spaces, with an emphasis on promoting biodiversity. Land in Raadi is divided between private owners, the municipality and the state, creating significant pressure for residential development in the area. The main building of the Estonian National Museum is located within Raadi, and the historic Raadi mansion, currently used by the museum, is surrounded by a large open space that hosts community events.

By 2000, land reform was completed, allowing private land transactions and the introduction of neoliberal planning regulations that favored private residential developments. This shift, combined with the pursuit of capital-driven private projects and a more strategic planning approach — considering the need for services and infrastructure — led to negotiations with private developers. Academic institutions were also brought in to help plan the future development of the Raadi area.

Sources: *MLP template 08.03.25 Raadi, Interview/June 2024*

Dynamics at regime level

Participatory initiatives in Raadi have been led, developed and implemented by the local government for years, **to engage residents step-by-step and improve the living environment and green infrastructure in the area.**

In practice, engaging residents has turned out to be yet another challenge - this draws out as a pattern. Local government is expecting residents to show more initiative and in their own words are ready to support them. The lack of steady active participation in the neighbourhood by residents was mentioned by one of the first interviews with the local government specialists and was confirmed in the next ones. Over the last few years, leading actors in the municipality feel they have made a real effort to meet the people half-way and support them.

Practical steps undertaken by the LG demonstrate some progress: planting trees and bushes with residents, painting benches, planning playgrounds and co-organizing a green recreational area, *Mõisavärava park*. **Local government's innovative action has a slow impact on community engagement and could be considered to be a "symptomatic solution" at least to some extent.**

The architect of the municipality, along with the other LG members, has reached out to engage the residents through various endeavours. Even though they have not achieved as active a participation from the residents as they had expected, there has been some interest and a few people joining in planting the trees in the area, community cleaning days etc. LG acknowledges the need for further and bigger collaboration with people in the Raadi area, recognising the issues borne out of lack of place-based identity, as well as the urgency for offering a space and support for those rare and single initiatives.

For instance, the municipality's cultural specialist has organised a few bigger gatherings and one major event with activities and performances. In her own words, when able, **she has tried using Raadi's vast green space and the anonymous and disconnected community for the ideas to start to change the situation slowly.** Developers have supported cultural specialists' ideas with money and services. According to the interviews with the LG members and some residents, there is a higher level of attention to Raadi and a channel of various resources to Raadi due to its particular position in the municipality of Tartu in

relation to its closeness to the city and to the developments and upgrades. One interview offered an insight into the dynamics - apparently nearby villages (e.g. Kõrveküla) tend to resent Raadi people and the events in Raadi neighbourhood, considering them to be “cityfolks”. (int 5)

This creates a precedent that brings along the pattern for Success to the Successful archetype (Braun 2002). This is also a clear example of community building happening from the other direction, making things happen for the residents, but not empowering them through their own ideas, doing together with them or having things done by them.

Local government is trying to carry out many consultations and discussions with landowners, entrepreneurs and residents to come to a mutual understanding of the local needs and preferences. New digital and social innovations to engage residents in local development activities have been applied by the local government (such as digital web apps for sharing information, social media platforms, workshops, and new procedures).

2017 marked a significant shift in communication between the local government and residents in Raadi. **The previously closed style of communication evolved into a more open and inclusive approach.** According to the local government, they began actively engaging with residents to better understand their needs and visions, and took steps to address these insights. Experts point to the real estate boom of those years and the adoption of an inclusive budgeting system as the key factors that accelerated this improved communication, creating a situation where “everyone won.”

Sources: Interview with LG specialists, 27.05.24

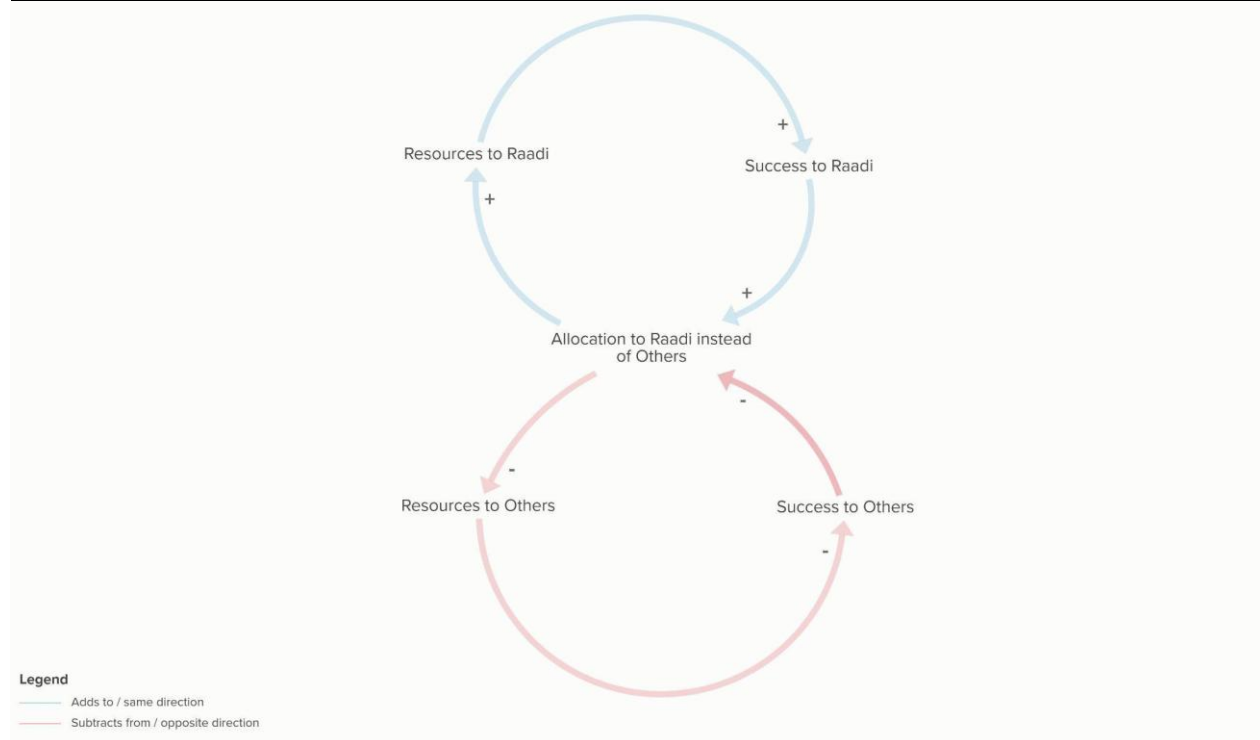


Figure 7.5.2: CLD regime level dynamics

<https://kumu.io/helinaut/cld1-raadi>

EXAMPLE

Upper loop: Resources to Raadi (instead of other neighboring communities) → + Success to Raadi → - Allocations to Raadi (as a new development) instead of other neighbouring communities

Lower loop: - Resources to Others → - Success to Others → - Allocations to Raadi instead of other neighboring communities

Niche level

Initiative goal: Improving living environment through more active community engagement and having a central physical space for doing so.

Currently, there are no active community leaders in Raadi. Efforts to build and lead a community from the outside have proven ineffective. As one municipal employee put it, “Pushing doesn’t work in a new community.” According to an interview with a local government specialist, **there are no non-profit organizations registered by Raadi residents, nor have there been any applications for funding, community initiatives, or events originating from within the neighborhood.**

Source: Interview with LG specialist, 26.09.24

Dynamics at niche level

People tend to pick Raadi as their home area due to the closeness of the city, as well as more favorable real estate prices and/or a better living environment. The completion of land reform by 2000 favoured the further development of private transactions with land. Private developers have been the main actors driving the process of new construction.

Raadi has gone through a change in the demographic consistency. The elderly living in the older apartment buildings are dying and the younger generation is taking over the existing buildings as well as the new developments. When the window of opportunity appeared and the new homes were being developed on residential land, the dissatisfaction with the quality of living environment in the neighborhood grew gradually.

At the bottom of the current and lasting issue of the disconnected community two main problems appear important – **limited communication and a lack of physical space for the community.** People discuss community matters in smaller groups and various events take place in different locations. There is no regularity or built-in pathways yet who to talk to and where to go. Taking part in the inclusive budget meeting is still unfamiliar - as one of the local residents described this: “I feel like everyone is a stranger, I assume that most people taking part would be from an older generation, but I don’t really know... it’s possibly biased” (25.09.24).

The biggest challenge in the Raadi area seems to be the disconnected community. Some smaller initiatives are being led, but do not reach far (events by LG, a small community garden, a few garage sales) and have not become traditions yet. One reason is the proximity of Tartu, people in Raadi go to Tartu to

consume - culture, shopping, but also schools and hobbies. It is easier to do just that, but as a result, nothing changes around them until this distinctive pattern changes.

To this day, most of the events organised in Raadi area are made to happen by the local government and not by the people living there. That might be the reason for not participating in the community events. The quick fixes attempted by the local government aim to make things happen, but in the long run, these do not solve the underlying matter of a disconnected community.

In Raadi, attempts to initiate activities by residents are rather rare, and rarely consistent. Even though there has been some advancement, **the residents are still hesitant to initiate activities and expect the local government to organise and lead in such matters.** In their interview, a Raadi resident pointed out that since they do not have a leader or activist in Raadi who would initiate events, they expect the local government to organise events for them. Due to the evident passiveness by the residents, this could be considered as Shifting the Burden archetype (Kim; Anderson 1998). However, the new and active residents who have initiated something feel that the local government shows interest only in the beginning, but has neither the specific knowledge or know-how for community building nor care enough to follow through the birthing phase, so that the community would start acting independently.

The lack of one central community building, or, for that matter, any usable building for such activities, has been one of the reasons that has kept the community from regular activities and the few potential leaders from getting anything seriously started. One resident claimed in their interview that **most people in Raadi are so engaged in their own life and problems that there is no time to be active in the community**, sometimes no time to even think about having a community. This is another key factor in the Raadi case. This resident also brought up the fact that participatory meetings by local government tend to receive limited interest from the people and if anyone goes there at all, then “it's always the same faces and for the most part elderly people going there as a social event”. (25.09.24)

There have been multiple single initiatives and not many consistent ones over the last decade. Raadi residents' Facebook Group is one of the consistent activities. The group has over 6000 members from Raadi and from the neighbouring communities, keeping their eye on the activities and the situation in the area.

There is a distinctive pattern for some or most of the initiatives in Raadi: to start off with, the organisers try to live up to the initial community building activity, but then the activity rolls back to achievable or to a lesser version of the original plan. E.g., the yoga group community has come up with various ideas over the years to start something new in Raadi - cooking together on Tuesdays or gatherings to learn about essential oils - but then falling back to just doing the regular yoga together. Another example is how the community garden was started in Raadi by a very active resident. Whilst it is still in existence, it is not growing or following the initial plan to unite a large group of people in the neighborhood.

The main hindrances for moving along from the niche level are: the **lack of a physical community space, the proximity of the city of Tartu, the lack of communication between the residents, unsteady initiatives due to various reasons and the general scattered layout of the living spaces in Raadi area.**

There is a long-standing yoga group in the area that has brought together over 20 women for nearly 20 years. They meet weekly for yoga classes and occasionally gather for other activities such as cooking sessions and essential oil workshops—forming a small but consistent community. Additionally, Raadi

has a small-scale community garden, which has been maintained for several years by an active local resident.

In the interviews, both the yoga instructor and the garden organizer expressed frustration at how difficult it is to bring people together and to foster a sense of unity. The yoga instructor noted that her group has remained the same size over the years—it has not grown, but has not shrunk either. While she dreams of a more active community in Raadi, she doesn't believe it is likely to happen anytime soon: "Most people in Raadi are so caught up in their own lives and problems that there's no time to be active in the community—sometimes not even time to think about having one. People are working multiple jobs just to get by."

She also remarked on the lack of connection in the apartment building neighborhoods, saying: "There's no real sense of community—people just say hello, if that."

Sources: *Interview, September 2024*

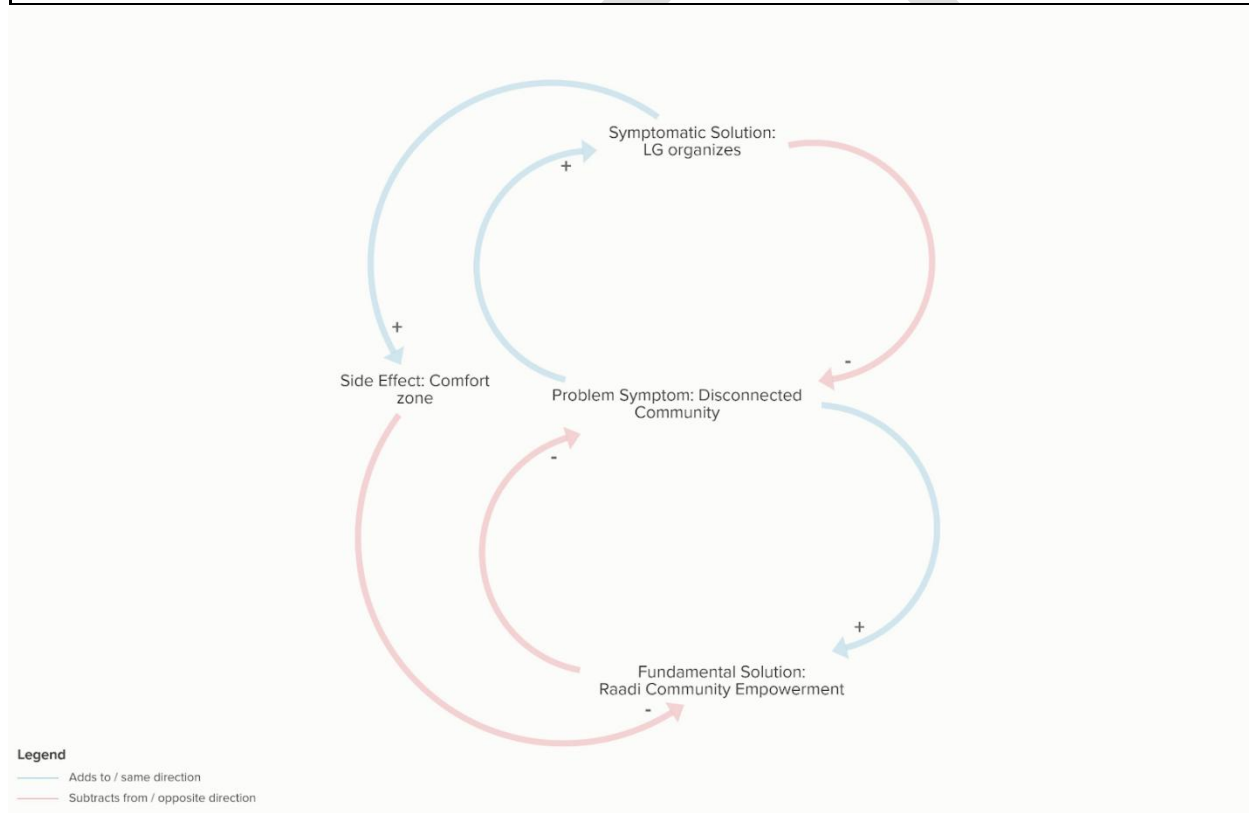


Figure 7.5.3: CLD Niche level dynamics

EXAMPLE: <https://kumu.io/helinaut/cld2-raadi>

Upper loop: Problem symptom: Disconnected community → + Symptomatic Solution: LG organizes → - Problem Symptom: Disconnected community

Lower loop: Problem Symptom: Disconnected community → + Fundamental Solution: Raadi community empowerment → - Problem Symptom: Disconnected community

Side: Symptomatic Solution: LG organizes → + Side Effect: Comfort zone → - Fundamental Solution: Raadi community empowerment

7.5.5 Summary and Conclusion

The summary is based on inputs of all the analyses provided in more detail above, including the textual and interview analysis, the SNA analysis, as well as the system mapping and causal loop analysis. It summarises the main trends prevailing in the data.

7.5.5.1 *Origin & Evolution of HE*

Historically, the Raadi settlement served as a cultural and economic center, originally as the heart of the manor owned by Baltic German landlords. In the 20th century, it became home to the collections of the Estonian National Museum and later housed military aircraft under Soviet control. Part of the Raadi area is a former brownfield site, located in and around the old Soviet military airport, which has been largely underused since the withdrawal of Soviet troops. The surrounding fields have remained largely empty.

In the 21st century, the new building of the Estonian National Museum has become a driving force behind Raadi's current development. Today, Raadi is a modern suburban area that began taking shape after 2000, featuring a mix of housing types. Over the past two decades, the area has seen a significant population growth, alongside the emergence of various industrial and business developments.

The completion of land reform by the year 2000 paved the way for increased private land transactions. Since then, private developers have been the main driving force behind new constructions in the area. Land ownership in the Raadi settlement is now divided among various private owners, the municipality, and the state. There is a significant pressure for residential development in the area.

Raadi is functionally connected to the nearby regional center, the city of Tartu, which offers key services such as healthcare, cultural institutions, secondary and vocational education, higher education, research, as well as major trade and transport hubs. As a result, Raadi has primarily evolved into a commuter zone for people working in Tartu.

Before the rise of CAIs, the area had very few public recreational or community facilities. To this day, there is no school or central community space. Many residents choose Raadi as their home due to its proximity to the city, more affordable real estate, and/or a perceived better living environment.

Population growth in the area is closely tied to residential development. While the construction of detached houses has remained steady over the years, the development of apartment buildings has increased significantly. The residential landscape is now dominated by 3- to 5-story apartment buildings, followed by terraced and detached houses.

Raadi has undergone a shift in its demographic makeup. Older residents living in the original apartment buildings are gradually being replaced by younger people, both in the existing housing and in the new developments. As new homes began to emerge and residential land was developed, dissatisfaction with the quality of the living environment slowly grew.

At the heart of the ongoing issue of community disconnection are two key challenges: limited communication and a lack of shared physical space. Community matters are often discussed in small, separate groups, and events take place across various locations, which makes it harder to build a cohesive

community. Resident-led initiatives in Raadi are relatively rare — and when they do occur, they tend to lack consistency.

In the media, Raadi is often portrayed as a contested space full of potential — its future as a thriving community remains uncertain and may swing either way. Municipal and city administrators, along with politicians, frequently highlight the area’s potential for CAIs, envisioning it either as a sustainable, vibrant, and “supercool” district, or as a site for intensive business development.

The support system for Raadi’s rare CAIs has gradually taken shape over time. Local government representatives have invested considerable effort and energy to meet residents halfway and provide meaningful support. Authorities have been actively engaging in consultations and discussions with landowners, entrepreneurs, and residents to better understand local needs and priorities.

As a new suburban area developed after 2000, Raadi has seen the local government adopt a range of innovative strategies to foster a stronger sense of place and encourage resident participation. These efforts aim to build a more connected community and increase cultural activities within the neighborhood. Participatory initiatives are largely led and implemented by the municipality, with the goal of gradually involving residents and improving both the living environment and the area’s green infrastructure.

7.5.5.2 *Organization & Activities of HE*

Despite some progress, residents in Raadi remain hesitant to initiate activities, often expecting the local government to take the lead in organizing events and community efforts. Currently, there are no active local leaders in the area. As noted in earlier analysis, there are no non-profit organizations registered by Raadi residents, no applications for funding, and no locally initiated events or initiatives. Voices from within the community are largely absent. In media coverage, Raadi residents are usually mentioned only in reference to their passivity or lack of visible engagement. Although the idea of a “Raadi community” is frequently discussed, its presence — and that of any real representatives — is noticeably missing. Media coverage of Raadi tends to focus on architectural competitions and the general notion that the area is “under development” — often framed as a contested space, or as a place where things are being done to it, rather than with it.

In recent years, themes like sustainability, green living, community development, and participatory decision-making have been introduced — concepts that have only more recently entered the public discourse around Raadi. An article directly addressing the community describes it as “anonymous” and largely passive, primarily receiving events organized by external actors. Even those labeled as “active community members” are portrayed as disconnected from the municipality, suggesting their activity is not aligned with the kind of engagement the municipality finds useful.

There is a recurring pattern among CAIs in Raadi: they often begin with strong ambitions for community building but eventually scale back to more modest, achievable goals — or abandon the original vision altogether. Nevertheless, the local government continues to pursue community-building efforts, particularly through green initiatives such as tree planting, environmental cleanups, and local planning activities aimed at improving the living environment. So far, these efforts have not led to a significant shift and remain largely one-sided, with the government acting as the main initiator.

Single representatives catch the vision of a new perspective of strategic community development, but overall, the purpose of these steps is forgotten or underestimated. This factor clearly affects the

development of the niche and appears to be a key factor behind the early stagnation or failure of many initiatives in the niche.

7.5.5.3 *Goals & intended Outcomes of HE*

Raadi historical example is quite unique in its concept, definitely valuable and interesting in its kind. The maturation of the niche is a slow process with some potential. While residents are looking for nearby activities, they remain closely tied to Tartu due to its proximity and the need to commute for work and school. Most residents lead busy lives and tend to be relatively passive when it comes to community engagement.

The local government and its representatives have initiated several activities in the neighborhood and supported various CAIs. Real estate developers and other entrepreneurs have also become involved, motivated by the potential for mutually beneficial outcomes.

A noticeable pattern has emerged in Raadi: many CAIs begin with strong intentions to build community but often scale back to more modest or achievable versions of their original goals. The niche can be seen as having potential for growth, but it is far from mature. Engaging residents has proven to be a persistent challenge, one that appears to repeat across different efforts. While the local government expects more initiative from residents, they claim to be ready to support them when they do step forward.

Developers are largely driven by the rising value of real estate in their new developments, while the municipality seeks partners — both in terms of ideas and resources — for projects aimed at current and future residents. However, maintaining consistency in collaboration with the municipality is difficult and often subject to political risks, as priorities shift with each new administration. There seems to be little meaningful dialogue among the local government, residents, and other stakeholders. The quality of communication is heavily dependent on the level of trust built over time — trust that tends to fluctuate with the political landscape.

One of the intended outcomes could be improved communication among key actors and stakeholders, fostering deeper understanding, more effective planning, and a stronger sense of community. This would support the maturation of the niche and enable future CAIs to thrive in a safe, growth-oriented environment that benefits everyone.

7.5.5.4 A multilevel perspective on the CAI using the MLP visualization

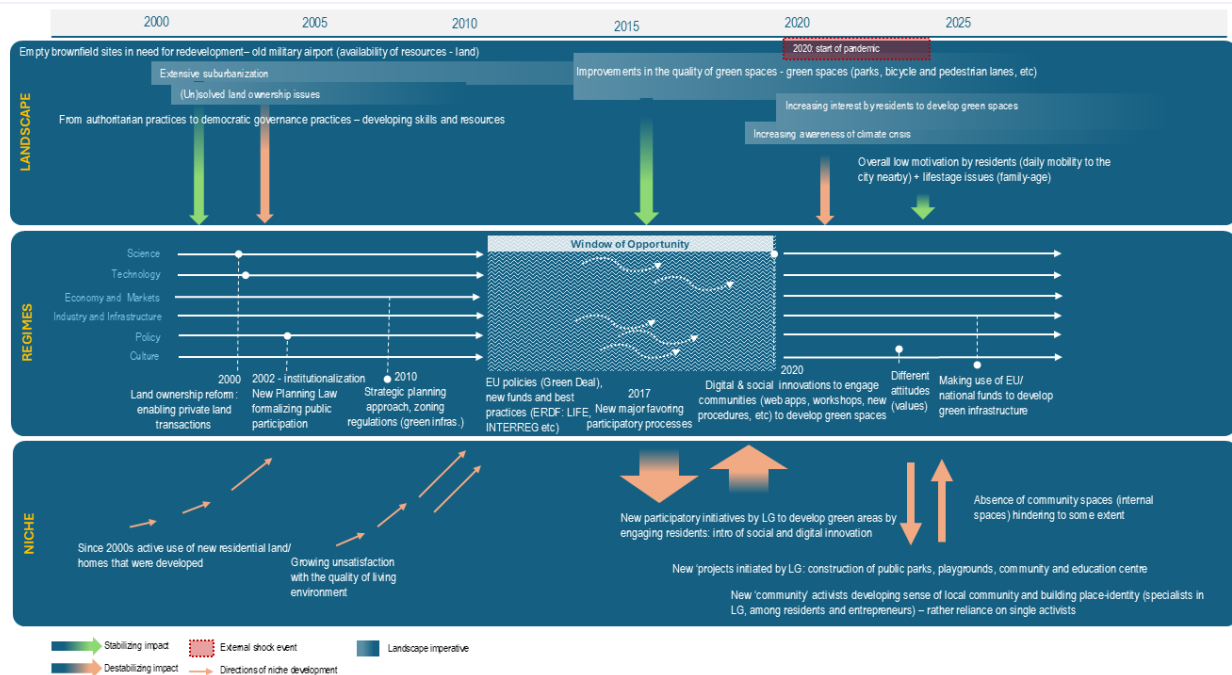


Figure 7.5.4: MLP visualization Multilevel perspective on the CAI

Impact of the regime level on the niche level

By 2000, the land ownership reform was completed enabling private land transactions to take place. New neoliberal planning regulations/strategies, however, greatly paved the way to the sporadic private residential developments without facilitation of the development of community spaces, local services and green infrastructure. The period was marked by the extensive residential influx. Altogether, it had a destabilizing effect on the niche level. The dissatisfaction with the quality of the residential environment became an issue due to the lack of local services and infrastructure.

Gradually, a more strategic planning vision was developed supported by the amendments in national legislation in the 2000s - the framework of the New Planning Law regulating the land use zoning and planning social infrastructure in new residential developments, and with further requirements on public participation. As a result, new niche level participatory practices and new spatial developments were enabled (having the stabilizing effect on the niche level). Over time, new services and infrastructure projects (incl. green infrastructure) were introduced with public engagement practices. Academics became involved through institutional partnerships to develop the Raadi area in a more resident- and environmentally friendly way.

Opening up more EU funding opportunities (e.g LIFE and Interreg programs), the new integrated projects enhancing biodiversity and community building were introduced (adding the stabilizing effect to the niche). In addition to the direct investments, capacity building and knowledge transfer became important elements facilitating the niche level developments. New participatory initiatives have been led, developed and implemented by the local government, to engage residents step-by-step to co-design the living environment in the area. Also digital and social innovations (web apps, workshops, new procedures, etc) were gradually introduced to engage communities and co-create green spaces. In practice engaging

residents has turned out to be yet another challenge which forms a pattern: lack of steady active participation in the neighbourhood by residents. Over the years, leading actors in the municipality have gone a long way to foster the community spirit (a few bigger gatherings and events have been organized). However, the biggest challenge in the Raadi area seems to be the disconnected community. Some smaller initiatives are being led by different actors, but do not reach far (e.g. events by LG, a small community garden, a few garage sales) and have not become a regular practice. There is also a characteristic reliance on particular individual actors in the municipality system (e.g. the Mayor, architect).

The impact of the regime level on the landscape level

The new political leadership has, in the light of new legislation and multiple funding schemes, enabled more institutionalised ways of public engagement and directed the development of public spaces (new zoning regulations). There have been new projects initiated by the LG which have led to the construction of public parks, playgrounds, community and education centers. Altogether, that has enabled a stabilizing effect on the landscape level. As a result, we can see an improvement in the quality of green spaces – parks, bicycle and pedestrian lanes, etc. Gradually, an increasing awareness of the climate crisis and its local impacts has been emerging. Overall, the motivation of local residents to participate in community activities has remained rather low (due to lifestyle issues and the tendency to commute to the nearby city).

At the regime level, digital and social innovations to engage communities (web apps, workshops, new procedures, etc) have supported the overall digital and social innovation at the landscape level. Overall, Raadi has become a more attractive area as a result of the LG initiatives, with the overall increased environmental awareness and satisfaction with the residential environment. Raadi is a place where the late Soviet airport was located previously on polluted land, but by now, it has become a residential area with plenty of green space and new cultural spaces attracting especially the younger families.

The Window-of-Opportunity

The W-o-O gradually opened with the introduction of the new planning vision for the local area – when in the 2010s, land zoning was introduced together with the large-scale infrastructure projects, such as light traffic roads, green zone areas, etc. This was supported by the availability of ERDF and other funding. New mayor was elected in 2017 who supported the process of public engagement wholeheartedly. In this window of opportunity which especially opened around that year, many new community activists – both among residents as well as the entrepreneurs – stepped into the arena to contribute to the better environmental quality and community creation. However, the activities are relying mostly on single activists and the LG initiatives have not been able to create large-scale visible support among the residents to their activities.

7.5.6 References

Kim, D. H., & Anderson, V (1998). Systems archetype basics. Waltham, Mass, Pegasus Communications Inc

Braun, W (2002). The System Archetypes. 2002

8. HISTORIC EXAMPLES OF ACTIVISM

8.1 Anti-nuclear movement in Austria since 1972 (AT)

8.1.1 Interviews

8.1.1.1 Documentation of application of the method

The interviews followed a semi-structured interview guide and were conducted between August 2024 and January 2025. All interviews were recorded and transcribed verbatim for analysis.

Table 8.1.1. List of interviews

Reference	Interviewee (Anonymized)	Date/Location	Length
IP1	Scientist and activist	August 14, 2024 - Vienna	80 min
IP2	Scientist and activist	August 14, 2024 - Online	116 min
IP3	Activist and later politician	January 16, 2025 - Online	59 min
IP4	Scientist and activist	January 16, 2025 - Vienna	159 min
IP5	Activist and later politician	January 17, 2025 - Online	30 min
IP6	Scientist and activist	March 21, 2025 - Online	60 min

8.1.1.2 Results

1. (Transformative) Objective of the CAI (Niche-Level)

The Anti-nuclear movement initially emerged as a niche movement during the late 1960s and 1970s, as it created a social space where critical perspectives on nuclear energy could be expressed and developed, constituting a “shielded space” (Törnberg 2018: 391) offering protection from mainstream political and economic pressures. In this context, the Anti-nuclear movement provided an environment where activists could share knowledge, build alliances, and voice concerns that were marginalized in mainstream discourse. As IP4 recalls, in the early days, people joined the movement by word of mouth and claimed to seek relationships with like-minded people in a very supportive community. The movement evolved from local to regional initiatives into a nationwide network (IP3). Interviewees emphasize that the Anti-nuclear movement was deeply rooted in volunteer work and thrived on a culture of openness and informal networking, characterized by direct communication, personal connections, and extensive discussions through flyers, pamphlets, and public lectures. Individual professionals (most of them with an academic background) are recognized as key disseminators of knowledge who fostered ethical and ecological awareness within the movement and established a scientific foundation (IP2, IP1). Thus, over time, the movement also took on an empowering function, actively engaging with the public, raising awareness, and shaping the narrative around nuclear risks, thus challenging dominant pro-nuclear policies. As IP5 noted, the strategy was to build a broad base of support by seeking alliances with as many parties as possible and attracting significant media attention to amplify their message. Its relationship with mainstream society evolved as it gained legitimacy and support, in part due to strategic media alliances (e.g., with the public newspaper Kronenzeitung), which helped bridge the gap between grassroots activism and wider societal acceptance.

According to IP2, the movement was defined by clear ethical goals and a vision of a responsible society, while economic arguments were initially secondary. The niche's objectives evolved dynamically as the movement progressed. In the interview, IP3 explains that the movement's main goals were to (a) educate the public about the risks of nuclear power and (b) to promote the concept of "nuclear-free electricity" and the support for renewable energies. Thus, the Anti-nuclear movement was fundamentally driven by sustainability objectives, aiming to protect human health and the environment from the long-term risks of nuclear energy. Activists viewed their efforts as a necessary response to the irresponsible use of nuclear power, advocating for transparent, inclusive decision-making processes to safeguard future generations. After the public referendum, the movement did not disband but evolved into a network of successor groups (see also impact of the CAI below).

2. Transformation Path of the CAI

The emergence of the window of opportunity at the regime level in 1978 resulted from a combination of increasing societal pressure and strategic decisions by political actors, such as chancellor Kreisky's announcement of the public referendum on the Zwentendorf nuclear power plant, which was for him and his party the social democrats a mere formality (IP3). According to IP1 and IP5, the strength of the resistance stemmed from the sentiment that many individuals were being run over by the political and economic 'steamroller,' prompting them to mobilize (the 'David against Goliath' effect). IP2 recalls that the primary factor was that many wanted to thwart the plans of Kreisky. „[...] At the time, we thought it would be great to achieve 25 or 30 percent. But suddenly, it seemed that the results for or against the power plant could be close" (IP2). The narrow result of the referendum - 50.5% against Zwentendorf - effectively removed the legitimacy of both the project and Chancellor Kreisky's political agenda. From the perspective of IP2, this result was highly significant, especially given that the ruling Social Democratic Party (SPÖ) was not obliged to hold a referendum in the first place (IP2, IP4). However, mounting public pressure and the sudden about-turn by the Austrian People's Party (ÖVP) - from years of support for nuclear power to outright opposition - led the SPÖ to stage the referendum (IP5). Kreisky was not naive, but he was under pressure and "[...] so sure of himself and wanted to end the prattling of fools once and for all" (IP2).

This interplay of niche pressure and regime concession was crucial to its success. In addition, the development of alternative technologies has played an increasingly significant role. Within the movement, various projects and initiatives have emerged that pragmatically address the issue of renewable energy, showcasing practical alternatives to nuclear energy (e.g., IP5 refers to the Wackersdorf solar factory following the construction freeze of the reprocessing plant). IP3 emphasizes the need to implement such alternative visions in practice to ensure a lasting impact on the regime in the long term rather than merely protesting against it.

3. Stakeholders of the CAI

Crucial to the success of the Anti-nuclear movement were individual actors who served as multipliers and knowledge brokers. In terms of niche-specific initiatives, grassroots activist initiatives and NGOs emerged as primary players. Committed citizens, including IP1 to IP5, played a pivotal role in promoting awareness, education, and activism. They organized demonstrations, wrote petitions, and established a network across all social classes. For instance, young activists such as IP3, who initiated the distribution of anti-nuclear stickers at the age of 16, collaborated with distinguished scientists like IP4, renowned for his critical research on nuclear risks, as well as with rural farmers who actively protested against nuclear projects. While some actors focused on building alliances across political and societal divides, IP4 emphasised

rational, fact-based arguments to bridge the gap between activism and scientific discourse. Despite the voluntarism that characterised these efforts, their professionalism and strategic direction were noteworthy. Local citizen initiatives further strengthened the network by organising meetings, distributing leaflets, and holding demonstrations, effectively raising awareness across different communities. Media support, notably from the influential public newspaper Kronenzeitung, further bolstered the movement's ability to bridge social divides. The synergy between grassroots activism, strategic leadership, and media alliances enabled the movement to connect diverse social groups, thereby creating a powerful, unified force for change.

The public broadcaster ORF was also pivotal to the movement. International connections, such as journalist networks, assisted activists in publishing critical information (e.g., the tip from Berlin about the planned 'world's largest nuclear power plant' in Temelín). Overall, a network of actors emerged in which grassroots groups, prominent supporters (e.g., artists, scientists), authorities, and the media influenced the transformation through shifting alliances. All interviewees stress the diversity within the movement as the most important factor contributing to its success. IP1 mentioned the broad coalition ranging from 'Maoists to conservative environmental activists,' and IP2 referenced 'heterogeneous alliances.' The variety of participants, from ultra-leftists to conservative environmentalists and religious groups, shared a common goal, although for different reasons. This heterogeneity, representing various ideological orientations, bolstered the social response and stability of the movement, as noted by IP1. In this context, IP2 emphasizes the pragmatic approach of not being distracted by ideological conflicts: 'The enemy of my enemy is my friend. [...] If I had applied my political and ethical filter to everything, as I do today, I would have far fewer allies.'

4. Relationships with Landscape and Regime and Their Effect on the Agency of the CAI

The Anti-nuclear movement in Austria illustrates how changes at the landscape level have served as a catalyst for the establishment of niches and influenced the regime. At the regime level, during the 1960s and 1970s, state energy suppliers, political elites, and international institutions (e.g., EURATOM) formed a pro-nuclear regime (IP3). Large nuclear power plant projects were capital-intensive, centralized, and managed by a small number of key players in government and industry. As a result, this regime was characterized by hierarchical structures, significant levels of investment, and centralized decision-making, which initially provided limited opportunities for public participation (IP1). However, due to rising societal pressures, primarily from civil society, the system began to show signs of fragility.

At the landscape level, global events and discourses played a crucial role in shaping the movement's trajectory. For example, the Chernobyl incident (a significant shock to the landscape) in 1986 resulted in a substantial increase in pressure on the niche as the population increasingly declined to legitimize the nuclear regime (IP3, IP2). This shift was further influenced by broader global trends, including the rise of the peace movement, the Cold War, and growing environmental awareness since the 1960s (IP1, IP2).

Consequently, the regime faced a legitimacy crisis and was compelled to respond. This response is exemplified by the construction freeze of a planned nuclear power plant in Wackersdorf, Germany, and the nuclear phase-out in Italy. Simultaneously, the niche exerted pressure on the regime, as evidenced by the mass mobilization of tens of thousands of people in response to the commissioning of Zwentendorf, which ultimately 'forced' politicians to hold a referendum on the issue (IP3). At this juncture, certain actors within the regime, notably the media and individual politicians, underwent a gradual shift in perspective, leading to a public expression of support for the demands of the niche. This shift created a positive

feedback loop, whereby the increased visibility of the protests led to greater resonance in the media and politics, which in turn encouraged further citizen participation. However, this dynamic was not without controversy and occasionally led to conflicts. The nuclear power regime responded to the protests with repression, as in the case of the planned nuclear power plant project in Wackersdorf, where police used water cannons against demonstrators (IP3).

5. Impact of the CAI

Ultimately, in the long run, the Anti-nuclear movement has led to regime change, including the push for renewable energy sources like solar and wind power, which have gradually transitioned from the fringes to the mainstream (for instance, the emergence of the first green-tech companies from former individual start-up and pioneer projects). After the referendum, a network of successor groups appeared.

Experienced activists remained active and became vital mentors by transferring their knowledge to the next generation. When new construction plans of nuclear power plants arose in the 1980s (e.g., Wackersdorf, Temelín), young individuals - including IP3 - formed new citizen initiatives such as "Notwehr gegen Temelín" (Resistance against Temelín), which also supported Czech action groups against the nuclear power plant Temelín. They sought guidance from 'veteran activists' on how to start a citizens' initiative, manage public relations, and strengthen public support. The implicit knowledge from the Zwentendorf era was thus passed on to the initiatives fighting against Temelín, which emphasizes the continuity of this movement (IP3, IP5).

8.1.2 Textual Analysis

8.1.2.1 *Documentation of application of the method*

Our text corpus focuses on the Anti-nuclear movement, its achievements, relationships, and tactics from a historic perspective. The final text corpus contains 15 elements, i.e. book chapters and scientific publications, newspaper articles, information campaign materials, online media, videos and podcasts, covering a period between 1974 and 2022. A total of nine previously collected sources were excluded from further analysis due to their limited additional content. Although central to the movement's cultural development, our analysis lacks media information on the culture regime as a primary source. From online research, we can estimate several hundred newspaper articles on nuclear energy in Austria were published in the 1970s and 1980s, however, digitized texts from this period of investigation are not publicly available.

The qualitative content analysis was conducted in MAXQDA 24.7.0, is based on a coding system, and includes a total of 1.197 coded segments. The incorporated texts mainly focus on the national scale (Austria). The identified key events of the Austrian anti-nuclear perspective occur over a period of more than 60 years and, therefore, refer to events from the window of opportunity (WoOp) but also from the pre-and post-phases. The analysis includes a mix of representatives from niche and regime levels, mostly from academia, NGOs and civil society organizations, politics, media, business and industry. Depending on the document source, the target audience is either the general public or the professional and scientific community. The anti-nuclear narrative is dominant in framing the debate, with many CAI references such as the ARGE No to Zwentendorf, Mothers against Nuclear-Power, as well as lead figures of the Anti-nuclear movement.

8.1.2.2 *Results*

Main results



The text corpus provides important information about the CAI network and thus contributes to a detailed post-processing of the SNA analysis as well as to the MLP visualization.

- It illustrates that the mobilization success of the Anti-nuclear movement against the Zwentendorf power plant was influenced by **relationships to supra-regional groups**, such as anti-nuclear organisations in the federal states of Vorarlberg and Upper Austria. These groups had already been successful in the mobilization against nuclear power prior to the mass protests against Zwentendorf, by raising concerns about the planned nuclear power plants in R  thi and Stein/St. Pantaleon. The CAI network therefore consists of different (also geographically separated) stakeholder groups, but all committed to a common narrative.
- An essential instrument in mobilizing people were the **public awareness campaigns** about the risks of nuclear energy, which were carried out by scientists and professionals, civil society organizations, artists, and citizens. These campaigns primarily manifested in a) public forums and educational events at universities, community centers, and town halls, b) public demonstrations and rallies, and c) public media such as newspapers, radio, and television. Anti-nuclear grassroots organizations and citizens' initiatives distributed leaflets, pamphlets, and educational materials throughout the country.
- **Main arguments against nuclear power** were safety, health, and environmental concerns (e.g., groundwater supply, final disposal of radioactive materials), which intensified in the wake of the Chernobyl (1986) and Fukushima (2011) nuclear disasters.
- **Pro arguments**, mostly surging from the policy, industry and infrastructure, and economy and markets regimes, refer to modernization, progress, security, and sovereignty (i.e. energy security, energy sovereignty, technological progress, economic progress, scientific progress, job security).
- **Citizens vs. 'The elites'**: The referendum is positioned as a response to regime mismanagement, challenging the traditional top-down decision-making.

From a **temporal perspective**, the CAI ranges from the 1950s to the present, although most of the texts incorporated in the analysis focus on the period between 1970 and 2000.

In the **pre-phase of the Window of Opportunity (WoOp) phase (1955–1977)**, the Austrian debate on nuclear energy was framed as a symbol of progress and modernization, central to energy security, energy sovereignty, economic growth, and welfare. Industry, policy and technology regimes portrayed nuclear energy development as a crucial step towards Austria's modernization. Public media played a key instrument in this framing: Newspapers, such as the Kronenzeitung, and the Austrian Broadcasting Corporation ORF largely echoed governmental and industrial narratives, presenting nuclear power as a safe, clean, and economically beneficial energy carrier. Media coverage also amplified the government's National Energy Plan, launched in 1976, promoting the planned construction of three nuclear power plants with a capacity of 3,300 MW in Austria: Zwentendorf and St. Pantaleon-Erla in Lower Austria, and St. Andr   in Carinthia, further reinforcing nuclear energy as synonymous with national progress and technological sophistication.

In contrast, the global anti-nuclear energy and weapons discourse demonstrates a stabilizing landscape imperative for the niche development, simultaneously challenging and destabilizing common pro-nuclear positions within e.g. technology or policy regimes. Public information about potential risks of nuclear energy (e.g. ecological, health, geopolitical) was sparse, but increasingly disseminated by individual professionals with scientific backgrounds since the 1970s at the interface between expert-driven public

awareness campaigns and grassroots activism. Here, the CAI refers primarily to a moral, security-related and democratic framing. The calls for action were direct (i.e. call for social mobilization and public protest, participation in the public referendum, dissemination of alternative energy discourse), promoting the politicization of a societal debate.

WoOp (1978): In 1978, the network activity within the Anti-nuclear movement reached its peak, intervening in unstable policy and culture regimes. Increasing societal pressure, shown through presence at public events concerning the nuclear development of Austria, demonstrations, and partially in the arts (e.g., concerts, exhibitions) led to the political decision to hold a public referendum on the National Council's decision on the future peaceful use of nuclear energy in Austria. In the immediate months before the referendum national newspapers began to publish more critically on nuclear energy, reinforcing the efforts of the Anti-nuclear movement to raise public and political awareness of potential risks, and unanswered questions concerning the technology. On the 5th of November 1978, the outcome of 50.5% of eligible voters speaking out against nuclear power in Austria provoked a regime change in many aspects. The window of opportunity closes with the adoption of the Atomic Energy Non-Proliferation Act in December 1978 as a result of the constitutionally binding referendum.

Post-WoOp-phase (1979-2000): After the referendum, institutional and governmental perspectives began to align with the anti-nuclear sentiment of citizens, reinforcing Austria's nuclear-free stance in national policy, which was then incorporated into Austria's national identity (Felt 2015). Austria's anti-nuclear stance within the political regime was significantly strengthened following the Chernobyl nuclear disaster in 1986, reinforcing societal and environmental concerns about the risks associated with nuclear power, including radioactive contamination and long-term ecological impacts. In addition, Austria actively engaged in policy interactions within the European Union, particularly in energy and environmental policy areas. Notably, the Austrian Government has been vocal in criticizing the EU's classification of nuclear energy as a sustainable investment under the EU Taxonomy Regulation in the European Parliament, advocating instead for prioritizing renewable energy sources over nuclear power. Furthermore, the Austrian government has consistently called for stringent, harmonized safety standards for existing nuclear installations across Europe in the EU-parliament and has pursued legal actions to oppose the promotion of nuclear power within the European framework.

By the 2000s and beyond, the debate broadened to include climate change and energy policy, though Austria's anti-nuclear position remained firm in EU debates. This suggests that once public opinion was solidified, the discourse became more institutionalized, shifting from niche activism to the stabilization and enforcement of the policy regime.

Main conclusions

The CAI is characterized by shifts in power relations, framings, and calls to actions in the context of parallel and competing discourses.

Pre-WoOp phase (1955–1977): A pro-nuclear stance was dominant both on regime and landscape levels, influencing both technological and cultural pro-nuclear developments. The pro-nuclear discourse was strongly tied to modernization, technological progress, and national economic development. Governments and industry leaders framed nuclear energy as a symbol of scientific advancement, crucial for ensuring energy independence and industrial growth. This narrative was reinforced by international institutions (e.g., IAEA) and pop culture influences (e.g., Disney's *Our Friend, the Atom*). Anti-nuclear

voices, primarily from the scientific community, lacked political influence and public engagement, limiting their effectiveness. In the public discourse and by politicians, calls for caution were framed as academic concerns rather than political imperatives, allowing pro-nuclear forces to dominate public discourse. At this stage, decision-making power was concentrated to (the hands of) policy, economy, and industry regime actors, leaving little room for citizen participation.

By the 1970s, public skepticism about nuclear energy grew, driven by increasing awareness of environmental risks, safety concerns, and democratic deficits in energy decision-making. The planned Zwentendorf nuclear plant became central for grassroots mobilization, as the Anti-nuclear movement effectively leveraged public demonstrations, and coalition-building to shift the discourse from a technocratic debate to a democratic issue. This became visible both at the discussion events hosted during the information campaign, and the uptake of the issue in national newspapers in the months before the referendum.

- **WoOp (1978):** The Zwentendorf referendum in 1978 marked a turning point, legitimizing the anti-nuclear cause and demonstrating the power of direct democracy in shaping energy policy. This phase represents a time of reversal in power relations, with citizen movements challenging the authority of regimes, especially the policy regime. Calls to action were urgent and emotional, portraying nuclear energy as a threat to public safety, democratic rights, and environmental (natural) integrity. The framing of CAI changed from marginal critics to legitimate political actors, as activists gained visibility and credibility.
- **Post-WoOp-phase (1979-2000):** Following the referendum, the anti-nuclear stance transitioned from activism to policy enforcement, as Austria officially maintained a nuclear-free position in 1979. Nevertheless, in parliamentary discussions policy regime actors maintained their overall pro-nuclear stance, seeking to revise the referendum outcome, and to reactivate the Zwentendorf nuclear power plant. The anti-nuclear discourse only became firmly embedded in national identity and energy policy after the Chernobyl catastrophe (Felt, 2015), shifting the framing from a movement resisting power to an established norm guiding governance. According to the analysed scientific reports, and publications, the language of urgency and protest declined, replaced by legal frameworks, sustainability discussions, and green energy alternatives. Calls to action were no longer about resistance but about reinforcing Austria's leadership in non-nuclear energy policy. As power relations stabilized, the policy regime aligned with the public's anti-nuclear sentiment, which marginalized pro-nuclear advocacy in the long run. The discourse evolved from confrontation to consolidation, making nuclear skepticism a mainstream, institutionalized position rather than an activist cause, mirrored by the levitation of the 1979 anti-nuclear law to a constitutional level.

The following main frames were identified over the full period, including which type of media used them primarily:

- **Modernization and technological progress (across all media types):** Before the public referendum, i.e. over a period of almost 10 years, there was a broad consensus within the political parties and among the public that nuclear power is a symbol of progress (economic, technological).

- **Democracy (across all media types):** Concerns about the state of democracy were raised in response to failures in political decision-making and the centralization of power among political and economic elites, as well as a lack of transparency and public participation.
- **National identity (academic media):** Austria's national identity is characterized by a strong affinity to nature and landscapes (ecological awareness). Nuclear power (and later genetic engineering in agriculture) is seen as a threat, driven by 'external' globalization dynamics.
- **Romanticization of the Anti-nuclear movement and its success in retrospect (academic media)**

Methodological reflections

In terms of access, we have found texts from the historic period hard to obtain and had to partly rely on prior analyses. Concerning interpretability, and the textual analysis framework, we have encountered some difficulties due to the length of our texts, and some of them not being primary sources. Furthermore, sentiments, and discourses on nuclear energy appear to be either strongly pro or against the technology, potentially creating bias concerning the Anti-nuclear movement in Austria, either romanticizing their successes, and regime actors, by potentially portraying them as overly disengaged from the public. These hurdles posed by the historical character of the case can also only be overcome to some extent – while some of the niche actors are still alive and available for interviews, most of the regime actors identified in our research have already passed away, leaving us with potentially partial accounts of their stances.

Furthermore, it would have been interesting for the analysis to conduct a detailed examination of articles from public daily newspapers. Unfortunately, the archives of the daily newspapers have not been digitized, which is a significant problem in terms of data access.

8.1.3 Social Network Analysis

8.1.3.1 Documentation of application of the method

The social network analysis was carried out in a two-phase process of data collection and analysis. Phase 1 builds on and further refines the results of the context and stakeholder analysis published in Deliverable 1.2, *Context and Stakeholders Analysis for Historic Examples of Political Participation*. For each stakeholder, identified additional MLP attributions (i.e. niche or culture, economy-industry, policy, science, technology regimes) have been integrated, including the detection and characterization of key relationships (i.e. cooperative, neutral, conflictual, missing relationships; weak, medium, strong relationship intensities) between these stakeholders. The transfer of the updated stakeholder information from phase 1 into a Kumu.io project provided a preliminary visualization of the network mapping.

In phase 2, additional data was created through the text analysis and the interviews conducted with stakeholders of the Anti-nuclear movement. Phase 2 facilitated the modification of the preliminary network mapping, which proved to be particularly constructive during stakeholder interviews, as well as the identification of directed resource flows towards social capital. In contrast to human capital, which centers on the intrinsic attributes of individuals, SNA recognizes particularly social capital and the significance of relationships between actors (i.e., moral, cultural, socio-organizational, human, and material resources) (López Martínez et al. 2024).

Table 2 and table 3 (see appendix) provide detailed information on identified stakeholders and relationships in the Austrian Anti-nuclear movement. The social network analysis provides a comparison of stakeholder and relationship characteristics. Additional centrality measures (D.1.1., chapter 8) show

how well-connected individual stakeholders were and how many links their connections had through the network.

8.1.3.2 Results

At a niche level (Fig. 1), the social network of the Anti-nuclear movement started to develop in the early 1970s, after the ÖVP government's approval of the construction of the Zwentendorf nuclear power plant in November 1969. Individual stakeholders, such as professionals with scientific backgrounds (SH11, SH12) as well as activist artists (SH18), began to spearhead public awareness campaigns, and first groups of citizen activists (SH3) appeared in early civil protest rallies in Zwentendorf. Within the next few years, individual regional Anti-nuclear movements emerged in both Vorarlberg (opposition to the Swiss nuclear power plant in Rütli) as well as in Upper Austria (opposition to the planned construction of Austria's second nuclear power plant in St. Pantaleon). But it was not until 1976 that the Initiative of Austrian Nuclear Power Plant Opponents (SH19, IÖAG) was founded, a national umbrella organization that united local and regional anti-nuclear energy initiatives from the federal states of Upper Austria, Salzburg, Vienna, Vorarlberg, and Carinthia.

In the following years, strong to medium cooperative relationships between the IÖAG (SH19) and capitalism-critical civil-society organizations (SH23: Communist Alliance Linz) or conservative environmentalist NGOs (SH20: Nature Conservation Association Austria) broadened the movement's ideology through cultural and socio-organizational resource flows. The heterogeneity of the niche network's interests and resources continued to increase, leading to the formation of diverse citizens groups (SH24: Biologists against Nuclear Power; SH25: Physicians against Nuclear Power; SH22: Mothers Against Nuclear Power; SH27: DW (Student's Circle Nuclear Energy; SH28: Artists against Zwentendorf), intermediate bodies (SH21: Austrian Students' Union; SH8: Trade unionists against nuclear energy and war), NGOs (SH26: Catholic Youth), and the civil society organization 'ARGE Nein zu Zwentendorf' (SH4) – a faction that split from IÖAG and represented the more conservative groups of the Anti-nuclear movement).

The most powerful stakeholders on the niche level were the IÖAG (SH19) and one key figure (SH11), who promoted activism with a strong scientific background, and the ARGE Nein zu Zwentendorf (SH4). Due to their relational and knowledge resources, citizens (SH3), artists (SH18), and further professionals (SH11, SH12) also demonstrate a high degree of power. They have accompanied and significantly influenced the movement since its beginnings. Focusing on the degree of centrality, activists (SH3) appear to be best connected, followed by both civil society organizations (SH4, SH19). Considering the closeness centrality, which indicates the capacity to spread information to the rest of the network most easily, the Initiative of Austrian Nuclear Power Plant Opponents (SH19) is most influential, due to their centered positioning, and their highest visibility across the mapping at the niche level (highest closeness centrality measure: 0.594).

Overall, during the pre-WoOp phase, the niche development exhibited a steadily growing, dense, and highly interconnected supra-regional network, characterized by intense (medium to strong), and cooperative multi-lateral relationships among different anti-nuclear stakeholders across Austria. The cohesion of the Anti-nuclear movement was backed by dense and largely mutual resource flows, especially human, cultural, and socio-organizational resources, between professionals who contributed scientific expertise and credibility, civil society organizations, e.g., the Initiative of Austrian Nuclear Power Plant Opponents (SH19), and citizen activists (SH3). Considering the density of cooperation and exchange of flows of resources within the niche network, the level of niche maturation peaked particularly during the window of opportunity between July and November 1978.

At the regime level (Fig. 1), one stakeholder stands out with the highest power value (10 out of 10) and degree centrality (refers to the number of connections) detected: the politician Bruno Kreisky (Social Democratic Party SPÖ, SH10), former Federal Chancellor of Austria and strong advocate of nuclear energy.

The Federation of Austrian Industries (SH1), the Chamber of Commerce (SH6) and the Verbund AG, which was a majority-owned by the state energy company (SH2), also have strong interest in promoting nuclear energy development in Austria, and represent very influential and powerful business and industry, and institutional stakeholders with close ties to the policy regime. All of these regime representatives, as well as the Austrian Federation of Trade Unions (SH7, ÖGB), maintained strong cooperative relationships, and derived power from normative and positional authority – particularly in the case of Bruno Kreisky (SH10), who, as Chancellor, appears best connected (highest closeness measure: 0.744), and had direct influence over political and public discourse through moral resource flows.

Despite their substantial structural power, the regime network relationships did not exhibit the same level of internal cohesion as the niche. A key point of contention emerged when the Austrian People's Party (ÖVP, SH16), initially aligned with the pro-nuclear stance of the early 1970s, strategically shifted towards an anti-nuclear position in 1977. This change was largely driven by political opportunism, as the ÖVP sought to weaken the SPÖ, which remained committed to nuclear energy under Kreisky's leadership and now faced opposition not only from civil society actors but also from within the political regime. Furthermore, the ÖVP's new position facilitated an unexpected political alliance with the Freedom Party of Austria (FPÖ, SH17), which had maintained an anti-nuclear stance from the outset.

Niche-regime interaction

Until the window of opportunity, however, most of the regime stakeholders shared pro-nuclear interests, emphasizing the potential of nuclear power for economic stability and energy security. Research stakeholders such as the Austrian Research Centre for Nuclear Energy (SH15) also benefited from considerable flows of resources in terms of funding during this period, facilitated by Bruno Kreisky (SH10) or the Verbund AG (SH2) during this period. The Anti-nuclear movement, on the contrary, increasingly viewed the political elite as detached from the will and needs of the citizens and as being driven more by narratives of modernization, economic growth, and technological progress than by genuine concern for the public good. To increase the transparency on potential risks of nuclear power, niche stakeholders, such as professionals (e.g., SH11, SH12), used existing relationships with public universities (SH14) and research institutes (i.e., Konrad Lorenz Institute, SH13) to disseminate knowledge through information campaigns. This strategy proved effective in mobilizing moral and socio-organizational resource flows to intervene in regime structures, especially during the window of opportunity when the policy and culture regimes remained unstable.

As a result, most of the regime's interest groups perceived the anti-nuclear allies and the instrument of civic protest against nuclear power as regressive, irrational, and endangering to the nation. Conflictual relationships between citizen activists (SH3) and Bruno Kreisky (SH10), professionals (SH11) and the Austrian Research Centre for Nuclear Energy (SH15), as well, at a later stage, between journalists (SH9), the Austrian Broadcasting Corporation (SH29, ORF), and Bruno Kreisky (SH10), illustrate this confrontation, which was not re-consolidated by the public referendum either. Although the public referendum passed with a narrow majority in opposition to nuclear power, the policy regime continued to debate nuclear power, follow-up referendums, and workarounds to activate the nuclear power plant in Zwentendorf. However, these discussions were silenced by the nuclear catastrophe of Chernobyl in 1986 (external shock

event), seven years after the public referendum, and the adoption of the Federal Constitutional Law of a Nuclear-Free Austria in 1999, respectively.

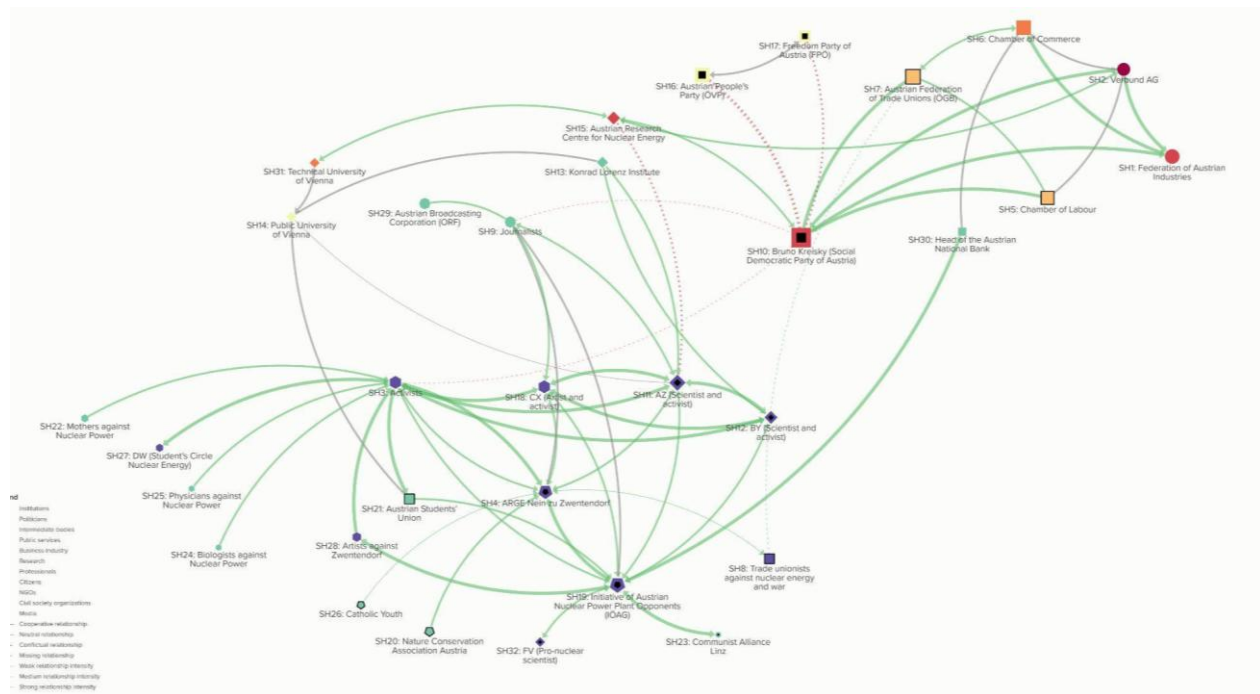


Figure 8.1.1: Network mapping of the Anti-nuclear movement, Austria

8.1.4 System Mapping

8.1.4.1 Documentation of application of the method

The development of the Causal Loop Diagram (CLD) is based on the information obtained from the textual analysis (8.1.2), interviews (8.1.1), and social network analysis (8.1.3). Initially, the collected data were examined to identify key factors and their patterns over time. This process posed challenges, particularly for niche-level dynamics, where the lack of specific data led to empirical shortcomings. As a result, the estimates provided in the analyzed texts and the interviews contributed to approximating development trends.

Following the identification of key factors, causal links were explored to describe the underlying dynamics. The CLD was constructed iteratively, adding links one by one while continuously assessing the feasibility of the emerging structure. Special attention was given to ensuring that the loop structures could describe the observed patterns over time.

System boundaries were defined at the landscape level to capture broad external contextual influences but without integrating them into the dynamic structure. Given the strong interconnections between niche and regime-level dynamics, a single integrated CLD was developed rather than separate diagrams. This approach allowed for a more comprehensive representation of the interactions shaping system evolution.

8.1.4.2 Results

Regime level

The Austrian government decided to expand nuclear energy, planning to build three nuclear power plants and a nuclear waste management facility after 1970.

Pattern over time 1: Political pro-nuclear agreement across parties (Policy regime)

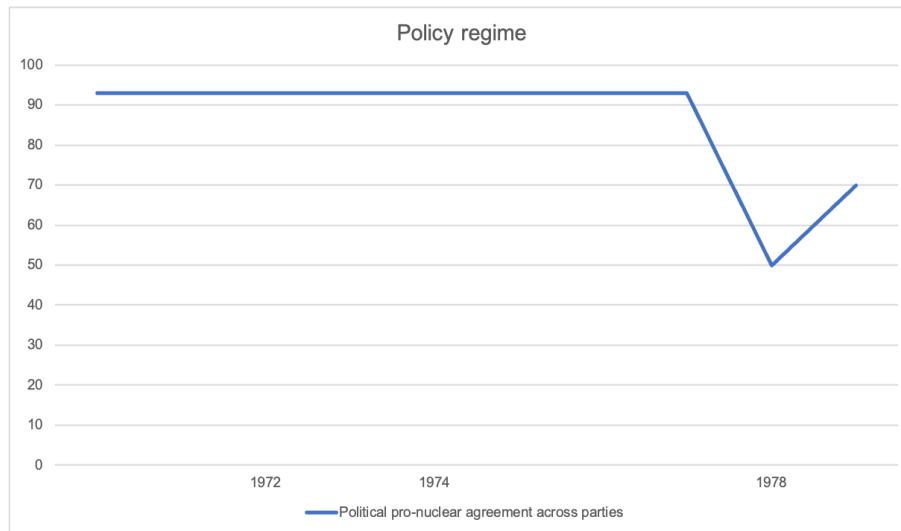


Figure 8.1.2: Political pro-nuclear agreement across parties between 1970 and 1980

Since the 1950s, cross-party political support for nuclear energy in Austria had been strong, driven by post-war economic recovery efforts (including energy security) and the desire to regain scientific momentum. Both the Austrian People's Party (ÖVP) and the Social Democratic Party (SPÖ) were firmly committed to nuclear energy policies, while the Austrian Freedom Party (FPÖ) remained the sole policy regime opponent until 1978. Considering the share of votes in the Austrian legislative elections in 1970, for instance, SPÖ (48%) and ÖVP (45%) clearly dominated the distribution of seats in the National Council, while FPÖ (5%) and other parties remained in the minority (IP3, IP5).

As public discourse shifted from a predominantly pro-nuclear stance to concerns over long-term safety, public health risks, environmental impact, and the link between civil nuclear energy and nuclear weapons, the ÖVP saw an opportunity to weaken the SPÖ (IP4, IP5). Just before the 1978 public referendum, the ÖVP pivoted to an anti-nuclear position (IP1, IP4). Despite the referendum's narrow majority against commissioning the nuclear power plant in Zwentendorf, various political initiatives emerged seeking a second referendum to reverse the decision and proceed with the plant's operation.

Pattern over time 2: Risk perception of nuclear energy (Culture regime)

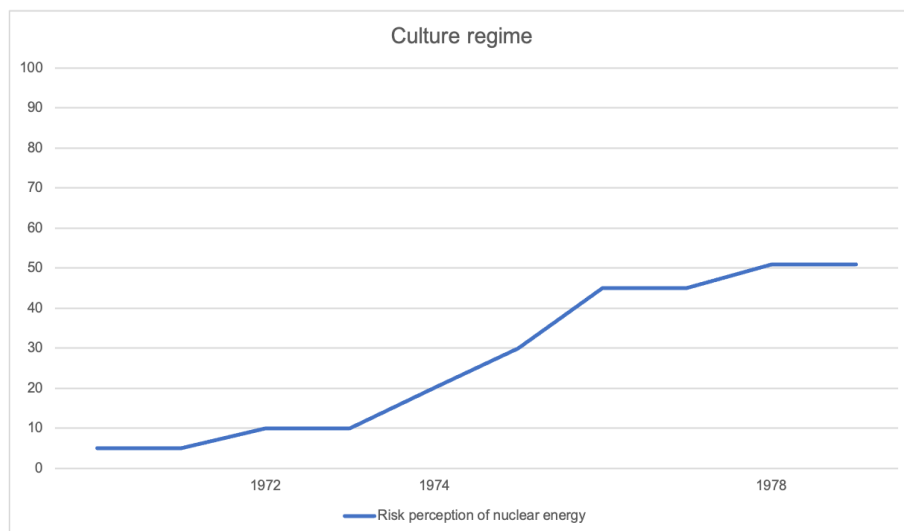


Figure 8.1.3: Public risk perception of nuclear energy production in 1970 and 1980

In post-war Europe, techno-optimism and a strong scientific bias on nuclear safety kept the public risk perception of nuclear technology relatively low in Austria. However, the construction of the Zwentendorf nuclear power plant in 1972 and the planned construction of Stein/St. Pantaleon, in 1973, intensified anti-nuclear sentiments (IP4). This shift was closely linked to public risk perception, as the Anti-nuclear movement primarily focused on increasing transparency and raising awareness of potential risks of nuclear radiation, unresolved waste management issues, and the connection between civil nuclear energy and nuclear weapons (IP3, IP4, IP5).

Public concern began rising more rapidly between 1974 and 1975 as multiple proposed nuclear sites led to the emergence of local and regional activist groups. These groups organized panels, participated in discussions, and launched information campaigns. A major factor in shaping national risk perception was a government-led information campaign conducted across all federal states, featuring both pro- and anti-nuclear experts (IP4). The anti-nuclear experts appeared better prepared and more cohesive in their arguments and were supported by a significant portion of the audience. This platform allowed activists to raise broader awareness of nuclear risks (IP4). The most intense phase of information campaigning coincided with the 1978 referendum. Through their expanding network, anti-nuclear activists successfully heightened public safety concerns, contributing to the narrow shift in public opinion and the outcome of the public referendum against the commissioning of Zwentendorf (IP1, IP2, IP4).

Pattern over time 3: Democratic awareness of citizens (Culture regime)

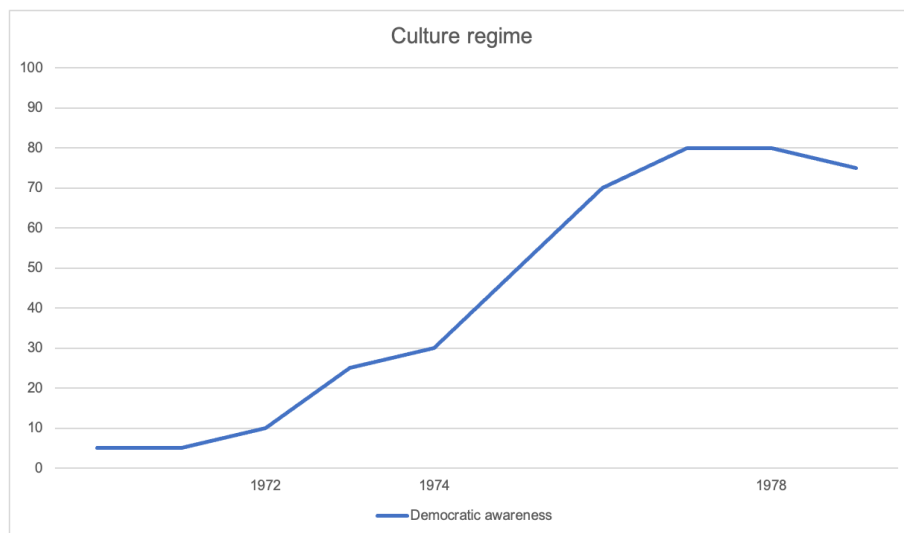


Figure 8.1.4: Democratic awareness of citizens between 1970 and 1980

Citizen involvement in Austria was historically weak, with political decisions primarily following a top-down approach by powerful policy regime actors, mostly without public debate. Political engagement was largely limited to voting. Some democratic momentum entered Austria with the 1960s peace movement, but its influence only became significant in the 1970s, when citizens began protesting and demanding greater accountability and transparency from policymakers (IP4). This shift in civic participation closely aligned with the Anti-nuclear movement and followed a trajectory similar to grassroots activism (see below).

Democratic awareness gained traction when protests emerged against the planned Swiss nuclear power plant near the border of the federal state of Vorarlberg. Regional activists successfully pressured both regional and national politicians, leading to an official statement opposing the plant's commissioning. Additionally, debates over the nuclear projects at Stein/St. Pantaleon and Zwentendorf transformed the public discourse, gradually shifting politics from closed-door decision-making to more open and competitive debates. Previously, protests were often dismissed as frivolous, hysterical, or socially inappropriate. However, the rise of the Anti-nuclear movement helped normalize public demonstrations. Many activists continued their efforts in the early 1980s and even expanded their networks in the "Hainburg Occupation" protest camp, which was against the construction of a hydropower plant in a national park near Vienna (IP3, IP4). Despite this shift, public enthusiasm for political engagement waned somewhat after the 1978 referendum, leading to a slight decline in participation.

Niche level

The Anti-nuclear movement tried to prevent Austria's expansion of nuclear energy, aiming for the ban of both nuclear power production and nuclear weapons by raising awareness in civil society, challenging political decision-making without the involvement of the public, and appealing to democratisation and long-term safety.

Pattern over time 4: Anti-nuclear grassroots activism (Niche)

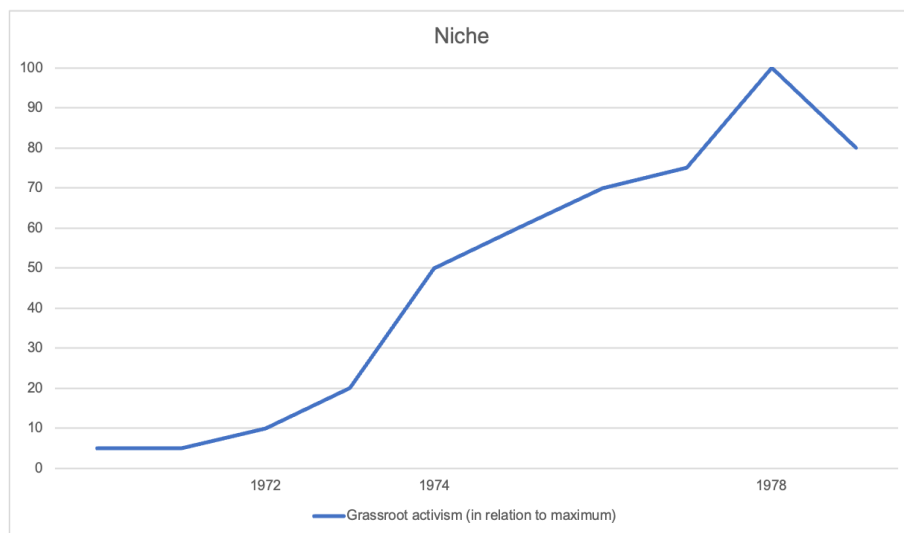


Figure 8.1.5: Intensity of anti-nuclear grassroots activism between 1970 and 1980

The first signs of anti-nuclear stirrings emerged in the late 1960s and early 1970s, influenced by the peace movement and growing environmental awareness. Small-scale protests began in 1970 at the Zwentendorf construction site, initially involving only a few dozen participants (IP4). Between 1972 and 1974, regional protests gained momentum, culminating in the founding of the “Initiative of Austrian Nuclear Power Plant Opponents” (IÖAG) in 1976 (IP4). This association served as an umbrella organization, coordinating anti-nuclear activities nationwide. The Austrian government’s information campaign further contributed to the expansion of the activist network by providing a platform for outreach, networking, and public engagement. In the period leading up to the 1978 referendum, anti-nuclear activities peaked (IP2, IP4). Following the narrow vote against commissioning Zwentendorf and the subsequent legal ban on nuclear energy, grassroots anti-nuclear activism in Austria declined. However, it regained strength through cross-border activism, such as against the nuclear power plant in Temelín, Czech Republic, in the 2000’s (IP3, IP5). Some activists redirected their efforts toward protesting against the planned hydro power plant Hainburg near Vienna.

Dynamics

The dynamics depicted in the causal loop diagram (CLD) operate at the intersection of the niche, policy, and cultural regimes. In the pre-phase of the window of opportunity, a cross-party pro-nuclear agreement—driven by economic growth imperatives and rising energy demands—led to major investments in nuclear energy. These investments were reinforced by information campaigns that emphasized the benefits of nuclear power, shaping a predominantly pro-nuclear public discourse (IP1, IP3, IP4). Given the widespread techno-optimism of the post-war years, public risk perception of nuclear energy remained low, further strengthening societal acceptance of the technology.

As long as public support for nuclear energy remained high, political parties maintained a largely uniform pro-nuclear stance. However, when public sentiment began to shift, the Austrian People’s Party (ÖVP) strategically adopted an anti-nuclear position to weaken the Social Democratic Party (SPÖ) in the eyes of voters (IP5). This political opportunism triggered unintended consequences: it contributed to eroding trust in institutions. Increased media coverage intensified scrutiny of the government’s handling of the nuclear issue, amplifying public dissatisfaction. This created a reinforcing feedback loop—political opportunism

fuelled critical media attention, which further weakened institutional trust, in turn generating more political manoeuvring. As trust in institutions declined, so did confidence in the way nuclear policy was handled in Austria, further shifting public sentiment away from nuclear energy (IP1, IP4).

The shift in public acceptance of nuclear energy was also shaped by cultural and grassroots dynamics. Rising scientific dissent and growing anti-nuclear grassroots activism heightened public risk perception, gradually reducing public acceptance of nuclear power (IP1, IP2, IP4, IP5). Grassroots movements played a pivotal role by fostering democratic awareness and driving public debate, which in turn led to greater media attention. These dynamics reinforced each other, creating feedback loops that amplified scepticism toward nuclear energy. Beyond increasing nuclear scepticism, anti-nuclear activism also introduced renewable energy discourses, advocating sustainable solutions that could achieve energy security without the reliance on nuclear power (IP3, IP4, IP5). This shift in discourse broadened the debate, further fuelling public engagement with energy policy.

The cumulative effect of these dynamics was a highly fluid public discourse. While nuclear energy initially enjoyed broad political and public support, grassroots activism and rising awareness of nuclear risks gradually shifted public opinion. This culminated in the 1978 referendum, which narrowly rejected the commissioning of the Zwentendorf nuclear power plant. Although grassroots activism declined somewhat after the referendum, the newly established culture of public engagement continued to shape Austria's environmental movements (IP3, IP4).

CLD

<https://kumu.io/fionalilith/sysm-anm-co-sustain#regime>

LOOPS

Balancing loops:

B1: # Public support for nuclear energy → + Public debate → + Information on nuclear risks → - # Public support for nuclear energy

B2: # Public support for nuclear energy → + Public debate → + Information on nuclear risks → + Risk perception of nuclear energy → - # Public support for nuclear energy

B3: # Public support for nuclear energy → + Public debate → + Democratic awareness → + Anti-nuclear grassroots activism → + Information on nuclear risks → - # Public support for nuclear energy

B4: # Public support for nuclear energy → + Public debate → + Media coverage → + Political opportunism → - Trust in institutions → + # Public support for nuclear energy

B5: # Public support for nuclear energy → + Public debate → + Democratic awareness → + Anti-nuclear grassroots activism → + Information on nuclear risks → + Risk perception of nuclear energy → - # Public support for nuclear energy

B6: # Public support for nuclear energy → + Public debate → + Media coverage → + Political opportunism → - Political pro-nuclear agreement across parties → + Investment in nuclear energy → + Information on nuclear benefits → - Risk perception of nuclear energy → - # Public support for nuclear energy

Reinforcing loops:



R1: # Democratic awareness → + Public debate → + # Democratic awareness

R2: # Public debate → + Information on nuclear risks → + # Public debate

R3: # Public debate → + Media coverage → + # Public debate

R4: # Democratic awareness → + Anti-nuclear grassroots activism → + # Democratic awareness

R5: # Political pro-nuclear agreement across parties → - Political opposition → - # Political pro-nuclear agreement across parties

R6: # Political pro-nuclear agreement within parties → - Political opposition → - # Political pro-nuclear agreement within parties

R7: # Trust in institutions → - Political opportunism → - # Trust in institutions

R8: # Information on nuclear risks → + Anti-nuclear grassroots activism → + # Information on nuclear risks

R9: # Political opportunism → - Political pro-nuclear agreement across parties → - Political opposition → + # Political opportunism

R10: # Trust in institutions → - Media coverage → + Political opportunism → - # Trust in institutions

R11: # Public support for nuclear energy → - Political opportunism → - Trust in institutions → + # Public support for nuclear energy

R12: # Democratic awareness → + Anti-nuclear grassroots activism → + Information on nuclear risks → + Public debate → + # Democratic awareness

R13: # Democratic awareness → + Anti-nuclear grassroots activism → + Renewable energy discourse → + Public debate → + # Democratic awareness

R14: # Anti-nuclear grassroots activism → + Renewable energy discourse → + Public debate → + Information on nuclear risks → + # Anti-nuclear grassroots activism

R15: # Democratic awareness → + Public debate → + Information on nuclear risks → + Anti-nuclear grassroots activism → + # Democratic awareness

R16: # Public support for nuclear energy → - Political opportunism → - Trust in institutions → - Media coverage → + Public debate → + Information on nuclear risks → - # Public support for nuclear energy

R17: # Public support for nuclear energy → - Political opportunism → - Trust in institutions → - Media coverage → + Public debate → + Information on nuclear risks → + Risk perception of nuclear energy → - # Public support for nuclear energy

R18: # Public support for nuclear energy → - Political opportunism → - Political pro-nuclear agreement across parties → + Investment in nuclear energy → + Information on nuclear benefits → - Risk perception of nuclear energy → - # Public support for nuclear energy

R19: # Public support for nuclear energy → - Political opportunism → - Trust in institutions → - Media coverage → + Public debate → + Democratic awareness → + Anti-nuclear grassroots activism → + Information on nuclear risks → + Risk perception of nuclear energy → - # Public support for nuclear energy

8.1.5 Summary and Conclusion

8.1.5.1 *Origin & Evolution of HE*

The Austrian Anti-nuclear movement (CAI) emerged in the late 1960s and early 1970s as a response to the government's nuclear energy expansion plans, foreseeing the construction of three nuclear power plants. Initially, representatives of the policy, industry, and technological regimes strongly supported nuclear energy, framing it as a symbol of modernization and progress, ensuring social welfare and energy security. Public awareness of nuclear safety issues was low, and political decision-making was highly centralized, limiting civil society agency in participation.

The Anti-nuclear movement consisted of local to regional grassroots activism initiatives, who raised concerns about safety, environmental risks, and democratic deficits in energy policy. Over time, the regional resistance clusters developed into a national movement. Professionals with scientific backgrounds, civil society organizations, and grassroots activists played a pivotal role in raising public awareness, shifting the debate from a technical to a socio-political issue. The national anti-nuclear movement's momentum culminated in the 1978 public referendum, in which 50.5% of eligible voters were against the commissioning of the nuclear power in Zwentendorf and provoked a regime change in many aspects. This turning point institutionalized Austria's anti-nuclear stance, shifting the movement from activism to policy enforcement. It also integrated broader environmental and sustainability concerns, linking its agenda to environmental protection and renewable energy.

After the referendum, and especially after the Chernobyl nuclear disaster in 1986, the movement transitioned from activism to institutionalization, as, following a peak in public opposition to nuclear technologies, the policy regime adopted a firm anti-nuclear stance. By the 1980s and 1990s, Austria's anti-nuclear stance extended beyond national policy, supporting foreign anti-nuclear movements, such as in Temelín in the Czech Republic. In addition, Austria's anti-nuclear position has also influenced the interactions within the European Union, particularly with regard to energy policies. Criticism of the classification of nuclear energy as a sustainable investment, strong advocacy for prioritizing renewable energy sources over nuclear power, or the harmonization of safety standards for existing nuclear installations across Europe are examples that demonstrate Austria's consistent opposition and its commitment to legal actions against the promotion of nuclear power.

8.1.5.2 *Organization & Activities of HE*

In the early 1970s the movement emerged as a decentralized coalition of local and regional grassroots activism groups, professionals, and civil society organizations. After 1976, key actors, including the Initiative of Austrian Nuclear Power Plant Opponents (IÖAG) and ARGE Nein zu Zwentendorf, coordinated efforts nationally. The movement focused on public awareness campaigns, protests, and political advocacy. Scientists provided expert knowledge, while grassroots activists and allies used media, lectures at universities, and civil protest rallies to raise awareness for the potential risks of developing and implementing nuclear energy technologies. Their success was built on a tight, dense network of a multitude of actors from diverse backgrounds, united by a single issue.

8.1.5.3 *Goals & intended Outcomes of HE*

The Austrian Anti-nuclear movement aimed to prevent the expansion of nuclear energy and to promote renewable energy sources. Initially, it focused on stopping the construction and commissioning of the nuclear power sites in Stein/St. Pantaleon, Zwentendorf, and Rütli (Switzerland), as well as the nuclear waste storage facility in Lower Austria (Waldviertel). The movement's broader goals included raising public

awareness of nuclear risks, strengthening the means of democratic participation, and advocating for environmental protection. The intended outcome was a nuclear-free Austria, achieved through the public referendum, the adoption of the Atomic Energy Non-Proliferation Act in December 1978 and the Federal Constitutional Law of a Nuclear-Free Austria in 1999.

8.1.5.4 A multilevel perspective on the CAI using the MLP visualization

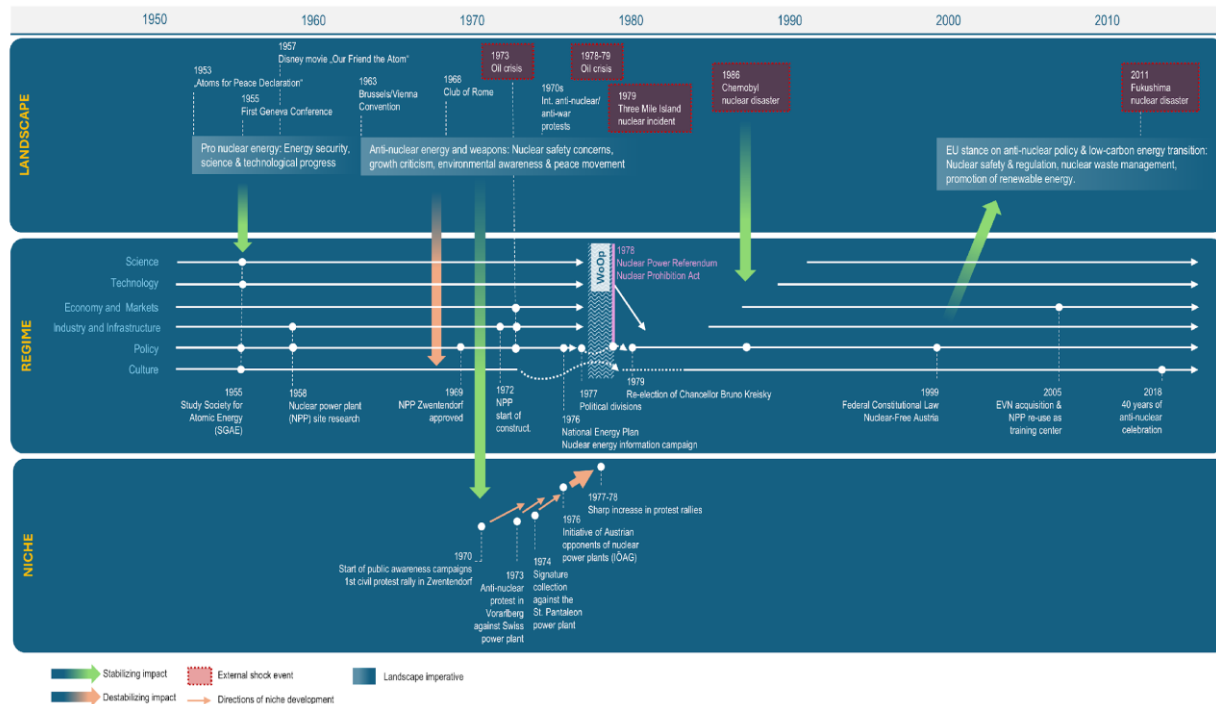


Figure 8.1.6: MLP visualization Multilevel perspective on the CAI

8.1.6 References

López Martínez, C., Sambo, A., Medina González, D. (2024) Mapping social movements momentum: unveiling networks in the movement for the right to abortion in Mexico. *Frontiers in Research Metrics and Analytics*. <https://doi.org/10.3389/frma.2024.1294495>

8.2 Energy poverty movements in Spain: Residents' movement in the Northern District of Granada (ES)

8.2.1 Interviews

8.2.1.1 Documentation of application of the method

The interviews followed a semi-structured interview guide and were conducted between October 2024 and November 2024. All interviews were recorded and transcribed verbatim for analysis. Table 1 shows a summary of interviews' information. Interviewees have been chosen to gather insights from within the CAI itself and from relevant stakeholders involved in the promotion and passing of the Residents' movement in the Northern District of Granada.

Table 8.2.1. List of interviews

Reference	Interviewee (Anonymized)	Date / Mode	Length
ND01	Technician in <i>Oficina Social de Comunidades Eenergéticas</i>	19/11/2024 / In person	1.5 h
ND02	President of <i>Asociación Vecinos Nueva Cartuja</i>	13/11/2024 / In person	1.5 h
ND03	Member of APDHA	07/11/2024 / Online	1 h
ND04	Professional at Healthcare Center in Northern District	21/10/2024 / Online	1 h
ND05	Researcher at University of Granada	19/11/2024 / Online	1h

8.2.1.2 Results

How and why did the initiative emerge?

The initiative emerged out of the residents' desperation due to the continuous power outages they experienced (ND01; ND02, 2024). These outages affected their quality of life, endangering people who depended on mechanical ventilators or needed refrigeration for food (ND05, 2024).

Residents banded together through word-of-mouth and neighborhood associations, with the aim of demanding their right to an electricity supply they were already paying for (ND02, 2024).

There was a perception that the electric companies were not maintaining the necessary infrastructure, and that the outages were not solely due to illegal hookups for marijuana plantations, but also due to a lack of supply from the company (ND05, 2024).

What type of transformation was attempted and how has the initiative's focus changed over time?

Initially, the primary objective was to demand that authorities and companies guarantee a reliable electrical supply and respect basic rights (ND02, 2024). The focus was not on issues such as climate change or sustainability (ND02, 2024). Over time, the initiative sought to raise awareness of the problem, sensitize public opinion, and pressure institutions to take action (ND01, 2024; ND02, 2024). It attempted to change the prevailing media narrative, which had exclusively linked the outages to marijuana cultivation (ND04, 2024). As the struggle advanced, it became evident that legislative changes were necessary to force companies to comply with their obligations (ND02, 2024).

In recent years, there has been increased interest in alternative energies and the installation of solar panels, although this was not the initial focus (ND02, 2024). Collaboration with other neighborhoods and cities facing similar issues has also been pursued, creating support networks and opportunities for sharing experiences (ND02, 2024). Efforts have been made to ensure genuine resident participation by consulting them and taking their opinions into account in decision-making (ND01, 2024).

Additionally, the local stakeholders did coordinate work in manifestation, meetings and interviews with different stakeholders, press releases, etc., to empower citizens and rebuild the value of collective action, fostering resilience and mutual trust (ND01, 2024).

Finally, the possibility of energy communities as a long-term solution is being considered, although it is recognized that the electrical grid must first be repaired and connections regularized (ND04, 2024).

Relationship with sustainability and climate change

Role of Sustainability in the Goals and Activities of the Initiative

Initially, the initiative was not focused on sustainability or climate change objectives (ND02, 2024). It was mainly focused on ensuring the right to a reliable power supply and to improve the quality of life for residents affected by power outages (ND02, 2024).

However, over time, a growing interest in alternative energies and the installation of solar panels has been observed (ND02, 2024). This evolution reflects an increased awareness of the importance of sustainability and the need to reduce dependence on polluting energy sources.

The initiative has sparked debate on the need to balance ecological transition with respect for the right to energy (ND04, 2024). The participants of the initiative recognized that the fight against energy poverty must go hand in hand with the promotion of sustainable energy solutions, considering energy communities as a means to promote the generation and consumption of renewable energy at the local level (ND06, 2024). However, it is acknowledged that infrastructure issues and the regularization of connections must first be addressed.

Contribution of the Initiative from the perspective of sustainability/climate change

The initiative contributes to sustainability by promoting the use of renewable energy and enhancing energy efficiency, thereby supporting the reduction of greenhouse gas emissions (ND01, ND06, 2024). Its struggle for a stable and affordable power supply creates favorable conditions for adopting cleaner energy solutions.

By drawing attention to persistent power outages, the initiative raises awareness about the importance of guaranteeing universal energy access, particularly for vulnerable populations (ND04, 2024).

In addition, the initiative has fostered the creation of networks and new forms of collaboration. Notably, it has reached institutional levels, such as the Granada City Council, where the mayor's engagement signals a growing social and political impact.

Niche characteristics

What makes this CAI a niche?



This CAI can be considered a niche because it emerges as a space of resistance and self-organization in response to a specific and persistent problem that is not adequately addressed by dominant institutions (ND01, 2024; ND02, 2024).

It fulfills protection functions by seeking to guarantee access to a basic right—electricity—thereby protecting residents from the risks and difficulties associated with power outages (ND02, 2024). This is especially relevant for vulnerable individuals, such as those with health problems or economic hardships (ND01, 2024; ND02, 2024; ND04, 2024).

It also fulfills empowerment functions by giving a voice to those affected, fostering citizen participation, and promoting collective action to demand their rights (ND01, 2024; ND02, 2024).

Moreover, the initiative functions as a free social space where residents can express their frustrations, share their experiences, and build a collective identity around the struggle for their rights (ND02, 2024). This space allows them to break free from the stigma and discrimination they face from dominant society (ND02, 2024).

How is the initiative's relationship with the dominant society?

The relationship between the initiative and dominant society is marked by complexity and ambivalence. On one hand, the initiative actively seeks recognition and intervention from key institutions—such as the city council, the regional and national governments, and energy providers like *Endesa*—to resolve the persistent issue of power outages (ND02, 2024).

On the other hand, there is deep-rooted distrust toward political and institutional actors. Many residents feel that the problem is either dismissed or instrumentalized for electoral gain, without leading to meaningful action (ND01, ND02, ND05, 2024). This perception is reinforced by a recurring sense of invisibility and abandonment, with the community's demands often left unaddressed (ND01, ND05, 2024).

Moreover, the initiative confronts social stigma and widespread misunderstanding. Public discourse frequently associates power outages in the Northern District exclusively with illegal activities—such as marijuana cultivation—thus reinforcing a negative image of the residents. This dominant narrative not only obscures the structural nature of the problem but also impedes broader societal support and meaningful policy responses (ND01, ND02, ND04, ND05, 2024).

Despite these challenges, there has been a gradual shift in public perception. In recent years, some sectors of society have become more sympathetic to the cause, thanks in part to more balanced media coverage and solidarity expressed by other neighborhood associations (ND02, 2024).

The initiative's relationship with academic institutions, particularly the university, is also ambivalent. While there is some distance, residents value the university's contributions to research, knowledge production, and raising the visibility of the issue (ND05, 2024).

Finally, certain institutional interventions—such as the installation of aerial power lines or the selective resolution of outages in specific areas—are sometimes perceived as superficial “patch” solutions. Rather than addressing the root causes, these measures risk fragmenting community solidarity and weakening collective mobilization (ND04, 2024).

8.2.2 Textual Analysis

8.2.2.1 Documentation of application of the method

For the Textual Analysis (TA) method, a first collection of text corpus was carried out.

The corpus included 47 texts:

- 45 documents *about* the CAI
 - 1 framed within a generalist approach
 - 8 framed within the niche level
 - 4 framed within the regime level
 - 5 framed within the landscape level
- 2 documents *indirectly related* to the CAI

The textual corpus is composed almost entirely of formal media coverage, with limited inclusion of social media discourse. However, indirect references to social media actions—such as digital mobilizations or public video testimonies—do appear in reports on protests or events (e.g. *Fundación Finanzas Éticas*' video testimony uploaded to YouTube). A limited number of reports and leaflets have been analyzed too.

From these textual sources 9 were selected for deep textual analysis using the MLP lens and critical discourse analysis tools, focusing on themes such as stakeholder representation, narrative frames, semantic fields, and discursive shifts over time.

We systematically coded the texts based on “who is speaking, to whom, about what, and how” (speaker–audience–theme–frame), distinguishing among regime and niche-level voices.

8.2.2.2 Results

Meta-data analysis: Voices and visibility

Voices of the topic

The analysis of the textual corpus reveals a nuanced understanding of the energy poverty crisis in the Northern District of Granada, where different voices participate in the debate, each with varying degrees of dominance. The debate around the power cuts and energy poverty in the Northern District of Granada occurs predominantly in regional and local digital newspapers (e.g., *Granada Hoy*, *El Independiente de Granada*, *El Salto Andalucía*, *Granada Digital*), with occasional coverage in national media (*El País*, RTVE). The textual corpus is composed almost entirely of formal media coverage, with limited inclusion of social media discourse. However, indirect references to social media actions—such as digital mobilizations or public video testimonies—do appear in reports on protests or events (e.g. *Fundación Finanzas Éticas* video testimony uploaded to YouTube). The most visible voices in the discourse are the residents of the Northern District and *Endesa*, the energy company responsible for the infrastructure and electricity provision. Local authorities, as well as advocacy groups and health professionals, also emerge as key stakeholders, though they occupy less prominent spaces in the debate.

The dominant voices in the debates are the following:

Residents

The community members, particularly those living in the Northern District, are most frequently represented in the texts, often framed as victims of systemic neglect. These residents consistently voice

their frustration and demand justice for the human rights violations they face due to the persistent power outages. In many articles, their voices are amplified through protests, legal actions, and grassroots campaigns. Their personal testimonies add an emotional layer to the discourse, showcasing the toll that the lack of electricity takes on their health and quality of life (Informe del Defensor de la Ciudadanía de Granada, 2021; Ahora Granada, 2023; Ideal, 2024).

Endesa

The energy company is predominantly criticized for its role in the energy crisis. Its portrayal oscillates between being a negligent corporation, responsible for poor infrastructure and recurring outages, and a company that is constrained by issues such as illegal activities (like marijuana cultivation) that allegedly interfere with its operations. *Endesa's* public relations strategies, including its defense of infrastructure maintenance and the claim of fraud as a major cause of outages, are documented across several texts (Camara, 2019; “Arroyo 2021; 2024”; YouTube - Fundación Finanzas Éticas, 2023; “El Independiente 2021; 2024”); “Granada Hoy entre los años 2019; 2022; 2023; 2024”).

Local authorities

The portrayal of local government authorities in the most part of sources is somewhat negative, with coverage emphasizing their reactive stance. While they are depicted as acknowledging the problem, the media repeatedly underscores their failure to implement long-term solutions. The local government is seen as passive, often caught between the pressure from residents and the more powerful interests of *Endesa* (Informe del Defensor de la Ciudadanía de Granada, 2021; Ideal, 2024; Ahora Granada, 2023; “El Salto - Andalucía 2021; 2023”).

Advocacy groups and health professionals

Groups like *Asociación Pro Derechos Humanos de Andalucía* (APDHA) and various health professionals are included in the narrative, especially when it comes to framing the issue as a public health crisis. These voices provide expert opinions on the consequences of energy poverty on physical and mental health (Valiente & García, 2020).

Visibility of the Topic

The issue of energy poverty in the Northern District has grown in visibility over time. It has moved from being a local concern to one that engages national and even European attention. The topic has been widely covered in local media outlets such as *Granada Hoy*, *El Salto Andalucía*, and *El Independiente de Granada*, with these sources acting as the primary channel for the voices of residents. National media, such as *El País* and *RTVE*, have also contributed by framing the energy crisis within broader debates on social exclusion, public health, and drug-related narratives. The European Parliament has played a role by officially receiving petitions and issuing recommendations to Spanish institutions, urging coordinated action to address systemic energy injustice in the district. However, these national and European contributions tend to be sporadic and often come in response to major events, public demonstrations, or institutional advocacy efforts.

The public discourse surrounding this issue has expanded significantly, shifting from a purely local matter to one framed within the broader context of social justice and human rights. This discursive shift is especially evident in the voices of community-based actors—such as residents, advocacy groups like

APDHA, and the *Defensor de la Ciudadanía*—who increasingly articulate their demands in terms of energy justice, equality, and the right to a dignified life (Informe Anual del Defensor de la Ciudadanía de Granada, 2021; “Granada Hoy entre los años 2019; 2022; 2023; 2024”; “El Salto-Andalucía entre los años 2021; 2023”; “El Independiente Granada, 2021; 2024”; Ahora Granada, 2023). These actors have actively contributed to reframing the issue from a problem of mere infrastructure failure to a systemic violation of rights.

However, this shift has not characterized all sources equally. While local and alternative media (e.g., *El Salto*, *El Independiente de Granada*) have embraced and amplified the rights-based framing, national outlets like *El País* have often continued to emphasize the role of illegal marijuana cultivation and criminality, reproducing older stigmatizing narratives. Similarly, institutional actors such as Endesa and some public authorities have predominantly focused on technical explanations (e.g., overloads, fraud, infrastructure).

There has also been a noticeable shift in who speaks: where earlier discourse was dominated by institutional actors or media interpretations, over time residents, health professionals, and civil society representatives have gained a more central and legitimate place in public debate. This growing visibility of community voices has been instrumental in shaping the discourse towards a more inclusive and justice-oriented framing.

Manifest content analysis: Themes and stakeholder representation

In terms of manifest content, the main themes that emerge from the corpus include energy poverty as a rights issue, health and safety risks, infrastructure neglect, illegal activities, and social inequality. The texts provide a detailed timeline of the crisis, showing how the situation has evolved from isolated incidents of power outages to a full-blown crisis that is deeply entrenched in systemic neglect and socio-economic inequality. This evolution aligns with the MLP framework, as the local level of energy provision intersects with broader institutional and political layers, including national government policy and European legislative attention (Informe Anual del Defensor de la Ciudadanía, 2021).

The topics of climate change and democracy are not explicitly central themes in the texts analyzed concerning the Northern District's energy crisis. However, these themes are indirectly embedded within the broader discourses on energy justice, human rights, and systemic neglect. Here's how each is reflected:

Climate change/Imperative

Indirect Connection via Energy Transition and Renewable Energy Policies

While climate change is not directly mentioned, the structural reform of the electrical system by the Ministry of Ecological Transition points to broader efforts in line with Spain's national strategy for sustainable energy. The APDHA's legislative proposal also suggests policies inspired by Catalonia's energy poverty laws, which are framed within energy transition strategies. These implicitly tie into climate action goals, though the focus remains on energy access rather than environmental imperatives.

Corporate framing of renewable energy investments

Endesa mentions investments in renewable energy infrastructure in their public responses to criticism during shareholder meetings and official communications, suggesting that energy transitions are part of their strategy. In these contexts, the company consistently includes references to its investments in

renewable energy infrastructure and its broader energy transition strategy. While not a dominant theme in independent media reporting, these narratives are occasionally echoed when media outlets report on Endesa's official statements. This corporate framing is used to justify ongoing infrastructure challenges and to position the company as aligned with sustainability goals, rather than for highlighting climate action as a priority (APDHA, 2022; YouTube Fundación Finanzas Éticas, 2023).

Absence in Grassroots Narratives

The community narratives and slogans, presented in regional and local digital media (Ideal, 2024; Ahora Granada, 2023; "Granada Hoy entre los años 2019; 2022; 2023; 2024"; "El Salto-Andalucía entre los años 2021; 2023; "El Independiente Granada entre los años 2021;2024") and protests emphasize energy poverty as a fundamental rights issue, focusing on immediate living conditions rather than linking their struggles to climate policy or sustainability imperatives (Informe Anual del Defensor de la Ciudadanía, 2021; "Granada Hoy, 2019; 2022; 2023; 2024"; "El Salto-Andalucía entre los años 2021; 2023"; El Independiente Granada, 2021; 2024").

Democracy

Framing of energy access as a democratic right

The residents' demands consistently emphasize that access to energy is a fundamental right, positioning it within the discourse of democratic entitlement. For example, slogans like "*Sin luz, no hay derechos*" (Without light, there are no rights), presented in local media (Juarez, 2024), reflect the sentiment that energy deprivation is a violation of democratic principles.

Critique of democratic institutions

The *Defensor de la Ciudadanía* (Informe Anual del Defensor de la Ciudadanía, 2021) and APDHA ("APDHA entre los años 2022; 2024"); Juarez, 2024; YouTube - Fundación Finanzas Éticas, 2023) highlight institutional failures in safeguarding citizens' rights, framing the government's inaction as a democratic deficit. Residents argue that their voices are ignored and responsibilities shifted between *Endesa* and public institutions, revealing systemic weaknesses in democratic accountability.

Grassroots mobilization and participatory democracy

Movements like the *Mesa Ciudadana Distrito Norte por la Luz* (Mesa Ciudadana Distrito Norte por la Luz, 2022) and the Platform Against Power Cuts are key manifestations of participatory democracy, where residents organize collectively to demand accountability from institutions and utility companies. In the analyzed corpus, these movements are often described in local media (e.g., *El Independiente de Granada*, *Granada Hoy*, *El Salto Andalucía*) with a focus on community resilience, dignity, and collective struggle. Early representations framed them as reactive efforts by affected neighbors; however, over time, particularly after 2021, there is a clear shift in tone and scope. Later texts portray them as structured civic actors with moral authority and strategic capacity—often amplifying residents' voices and articulating claims in legal, political, and human rights terms.

Media articles increasingly use direct quotations, testimonies, and manifestos produced by the movements themselves, giving visibility to their narratives. These texts frequently include emotionally charged language such as "*lucha por la dignidad*," "*resistencia colectiva*," or "*nos están matando en vida*,"

which reinforces the legitimacy of their demands. While the term "democracy" is not explicitly invoked, the representation of these grassroots movements clearly aligns with democratic ideals of participation, accountability, and bottom-up governance. Notably, institutional responses—such as participation in European Parliament hearings or formal recognition by the local government—are also documented in these sources, reflecting a gradual institutional acknowledgment of their role in shaping the public agenda.

Timeline of the HE

The textual corpus reflects how the issue of energy poverty in the Northern District has grown from a local grievance into a regional and national debate. In 2019, the coverage was dominated by allegations of illegal activities affecting the power supply. By 2020, the discourse had evolved to focus more on structural issues, such as inadequate infrastructure and health impacts, marking the beginning of formal advocacy. By 2022, the issue gained wider attention, with the European Parliament acknowledging the problem and urging reforms. The crisis continued through 2023 and 2024, with protests and legal action intensifying.

Stakeholder analysis

The representations in the texts show how different stakeholders have evolved in their engagement with the crisis. Initially, scrutiny of the situation—primarily in media coverage—focused on technical deficiencies and suspected criminal activity (e.g., illegal marijuana cultivation) and was directed mainly at *Endesa* and occasionally local authorities ("Arroyo entre los años 2019; 2023"; YouTube - Fundación Finanzas Éticas, 2023). Over time, this scrutiny has expanded and shifted significantly, largely due to the increasing visibility and advocacy efforts of local groups such as the APDHA, the *Defensor de la Ciudadanía*, and the Platform Against Power Cuts (Informe Anual del Defensor de la Ciudadanía, 2021). These groups have redirected attention toward the public health implications and systemic human rights violations resulting from the recurring power outages. Their involvement has reframed the public discourse—from a narrow focus on technical failures or criminal causes to a broader concern with institutional responsibility for the health and dignity of residents in the Northern District. Thus, the scrutiny now includes government bodies at local and regional levels (for lack of oversight and intervention), with a discourse increasingly centered on the rights of vulnerable populations such as electro-dependent patients, elderly residents, and children, as articulated in both legal actions and media narratives (Valiente & García, 2020; Informe Anual del Defensor de la Ciudadanía, 2021).

Shifting themes and calls to action

Early in the discourse, the focus was mainly on infrastructure failure and the technical issues surrounding the electricity supply. However, as the crisis has dragged on, the themes have broadened to include human rights violations, health consequences, and corporate accountability. The call to action has shifted from technical fixes to a demand for systemic reform, highlighting the need for public authorities to intervene and for *Endesa* to be held accountable for its role in exacerbating energy poverty (Gijón, 2022; APDHA, 2022; Juárez, 2024). This shift mirrors the changing focus of advocacy from infrastructural concerns to a broader fight for energy justice (Informe Anual del Defensor de la Ciudadanía, 2021).

Latent content analysis: Power relations and competing discourses

In terms of latent content, the analysis reveals significant power imbalances within the discourse. *Endesa* is portrayed predominantly in a negative light, as a corporation that profits from the exploitation of

vulnerable communities. The power dynamics in the discourse suggest that *Endesa* is portrayed as the main antagonist, whereas residents and advocacy groups are depicted as the underdogs, struggling to gain visibility and accountability (Informe Anual del Defensor de la Ciudadanía, 2021; “El Salto – Andalucía - various articles by Sarrión and Báez Boza, 2021; 2023”).

Semantic fields

The primary semantic fields that emerge throughout the corpus include terms such as "rights", "justice", and "accountability". These terms are particularly prominent in the texts written by residents and advocacy groups, who frame the issue not as a mere service failure but as a moral and social injustice (Valiente & García, 2020; Informe Anual del Defensor de la Ciudadanía, 2021; APDHA, 2022; APDHA, 2024; Juarez, 2024; Mesa Ciudadana Distrito Norte por la Luz, 2022; various articles in *El Salto Andalucía* and *El Independiente de Granada*). In contrast, articles in national newspapers (*El País*), texts from *Endesa* and government bodies focus on technical issues and regulatory hurdles, using terms like "infrastructure", "fraud", and "maintenance" (Camara, 2019; “Arroyo entre los años 2021; 2024”; YouTube - Fundación Finanzas Éticas, 2023). This contrast in terminology further underscores the competing discourses: one grounded in human rights and social justice, the other in corporate responsibility and technical challenges.

Foregrounding and who gets to speak

Over time, there has been a shift in who gets to speak and be heard. In the early stages of the crisis, *Endesa* and local authorities dominated the discourse, often framing the issue in terms of technical failures and the impact of illegal activities. As the crisis has unfolded, however, residents' voices have become more dominant, and advocacy groups have taken on more prominent roles, pushing for systemic changes. This shift signifies a broader change in public discourse, where grassroots movements and community-led advocacy are now central to the conversation (Informe Anual del Defensor de la Ciudadanía de Granada, 2021; “Granada Hoy entre los años 2019; 2022; 2023; 2024”; “El Salto-Andalucía entre los años 2021; 2023”; “El Independiente Granada entre los años 2021; 2024”; *Ahora Granada*, 2023).

Methodological reflections

Challenges and assumptions

The process of collecting and analyzing these texts presented several challenges, particularly in terms of access to institutional data and media articles before 2018 and the interpretability of technical aspects related to infrastructure. The language of power in these texts, where companies and authorities are often more concerned with maintaining their image, required careful attention to decipher the underlying political and social implications.

Initially, we approached the texts with the assumption that the problem was primarily a matter of infrastructure and technical oversight by *Endesa*. However, as we progressed through the corpus, it became clear that the issue is deeply rooted in systemic inequalities and institutional neglect, and the primary concern shifted to energy justice and human rights.

Furthermore, the media's portrayal of the issue evolved over time. Early articles often centered on the technical aspects of the crisis, while later pieces began to emphasize the moral and human rights dimensions, reflecting the growing public awareness of the issue and the increasing advocacy of affected communities.

Our overall conclusion is that energy poverty in the Northern District of Granada is not merely a technical issue, but a discursive battleground shaped by competing narratives. Corporate actors and national media often attribute the crisis to illegal activities, while residents, health professionals, and advocacy groups frame it as a violation of rights and a public health emergency. The shifting visibility of grassroots voices, their increasing presence in the media, and their strategic use of human rights and health discourses have begun to challenge dominant frames. This reflects a slow but tangible capacity of the CAI to reshape public discourse and assert political agency in a context marked by asymmetrical power dynamics.

8.2.3 Social Network Analysis

8.2.3.1 Documentation of application of the method

The Social Network Analysis (SNA) has built on the previous work done in the first research phase that served to contextualize the HE. For this phase, MLP theoretical framework and various methods and data sources were used to capture a first picture of the scale, dynamics and relationships between the various elements that constitute the niche in which the HE occurred. The results are gathered in the Context and Stakeholders Analysis for Historic Examples of Political Participation report (Deliverable 1.2).

Building upon this first research phase, those findings have been complemented and largely enriched with two other methods, namely the Textual Analysis (as described in section 8.2.2) and the Semi-structured interviews to key representatives of the HE (as described in section 8.2.1). This second phase has helped in understanding the type, the intensity, the impacts, and the interests of the relationships between the different stakeholders, in addition to identifying new ones and better detailing the different interactions, as well as the flow of resources between the stakeholders.

The SNA has been depicted in a dedicated diagram for the HE, along with an excel file gathering the breakdown of the different stakeholders' relationships.

8.2.3.2 Results

Influence and power in the network

Figure 8.2.1 shows the stakeholder network map of the HE “Energy poverty movement in the Northern District of Granada (ES),” a CAI for activism.

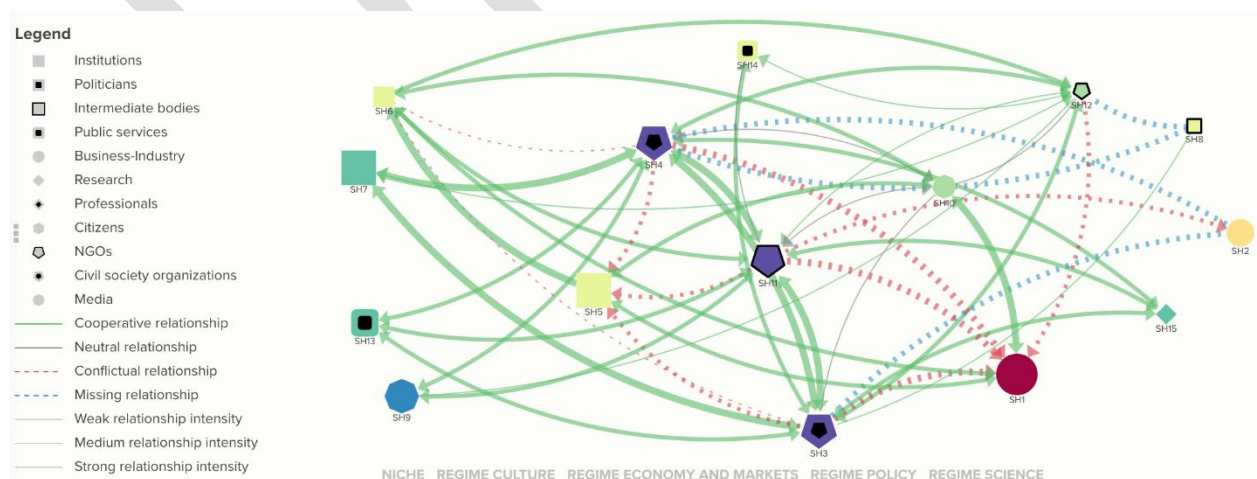


Figure 8.2.1: Network mapping of the Residents' movement in the Northern District of Granada, Spain

The most powerful and influential actors in the network are, on one hand, some promoters of the Energy Poverty Movement in the Northern District of Granada, such as the Platform against Power Cuts (SH3) and Asociación de Vecinos Nueva Cartuja (SH4)—which operate at the niche level as civil society organizations—and, on the other hand, from the regime level, Endesa (SH1), the electricity distribution company, Local Newspapers (SH11), the Granada City Council (SH7), and the Ministry of Industry, Energy, and Tourism (SH5). The promoters, representing the citizens, support the CAI, while Endesa (SH1) opposes it. Local Newspapers (SH11) changed their position over time, going from opposing to supporting the CAI. Both the Granada City Council (SH7) and the Ministry (SH5) were neutral most of the time; however, the City Council (SH7) did manage to influence grid improvements in one critical area of the northern district, causing division among neighbourhoods in the CAI.

The promoters' power and influence stem from their cooperative efforts and sustained advocacy. Since the start of the CAI, the Asociación de Vecinos Nueva Cartuja (SH4) have maintained a strong cooperative relationship with other neighbourhood associations of the area, and then, with the creation of the Platform against Power Cuts (SH3), the CAI established a more organised fight, largely thanks to the effective use of moral (public recognition and external support), cultural (operational methods), socio-organizational (social networks and supporting organizations), and human resources. In fact, they brought the issue of power outages before the European Parliament. Endesa (SH1), as the grid owner, holds the power to decide on grid improvements. Local Newspapers (SH9) have the power to influence and even shift public opinion. The Granada City Council (SH7) can influence energy companies' decisions regarding grid improvements, and the Ministry (SH5) can compel the companies to make such improvements.

Conflict and tensions within the network

Most of the relationships among the identified actors are cooperative (65%), of which about 23% are strong, 59% are medium, and 18% are weak. Conflicted relationships make up 23%, while 12% are neutral. The main conflict in this CAI is between the civil society organizations representing Northern District residents and Endesa (SH1), the grid owner. The conflict arises because residents demand improvements to the electricity infrastructure, while the company insists the problem is residents' excessive (sometimes illegal) consumption. There is another conflict between these same social organizations and the Ministry (SH5), as they feel it fails to resolve or confront Endesa (SH1), despite having the authority to mandate improvements.

Niche maturation and development

The first window of opportunity appeared in 2011, within the framework of Spain's 15M (Indignant Movement for the Revitalization of Social Movements), at which point only some protests against power cuts had taken place. The second, and main, window of opportunity occurred in the 2019–2020 period, when energy poverty received greater attention from local politicians and the media. By that time, the Asociación de Vecinos Nueva Cartuja (SH4) was already established, and the Platform against Power Cuts (SH3) was created. These civil society organizations gained a different level of visibility, and the Granada City Council (SH7) began paying attention to them. During this period, the media also shifted its stance in favor of the CAI, helping secure funding for partial improvements to the electricity network in the Northern District of Granada.

On the other hand, some missing relationships could have strengthened the CAI's development. For instance, a potential collaboration between the Energy Poverty Advisory Hub (SH8) and some niche

stakeholders (*Asociación de Vecinos Nueva Cartuja* (SH4) and *Cooperase* (SH12)) might have strengthened the movement in the Northern District, and increased the Ministry's (SH5) willingness to intervene with *Endesa* (SH1).

8.2.4 System Mapping

8.2.4.1 Documentation of application of the method

Similar to the SNA, the System Mapping method has built upon the previous work done in the first research phase that served at contextualizing the HE. Building on the initial research phase, those findings have been complemented by the Textual Analysis (as described in section 1.1.1) and the Semi-structured interviews to key representatives of the HE (as described in section 1.1.2). Interviews have been valuable for the System Mapping, allowing for a deeper exploration of how the main niche and regime factors have evolved. They have also provided important insights into the cause-and-effect relationships between several key factors.

This has led to the narrative description of the key factors presented below, along with the Causal Loop Diagrams, which offer a visual representation of these factors.

8.2.4.2 Results

Regime level

Regime level issue that led to niche development(s):

The persistence of power cuts in the Northern District of Granada, exacerbated by systemic neglect, inadequate infrastructure, and ineffective regulatory interventions, led to increasing public dissatisfaction. As authorities and energy providers failed to implement long-term solutions, grassroots activism emerged as a response to advocate for energy justice and accountability.

Patterns of key factors at regime level

Pattern 1: Fixes that fail

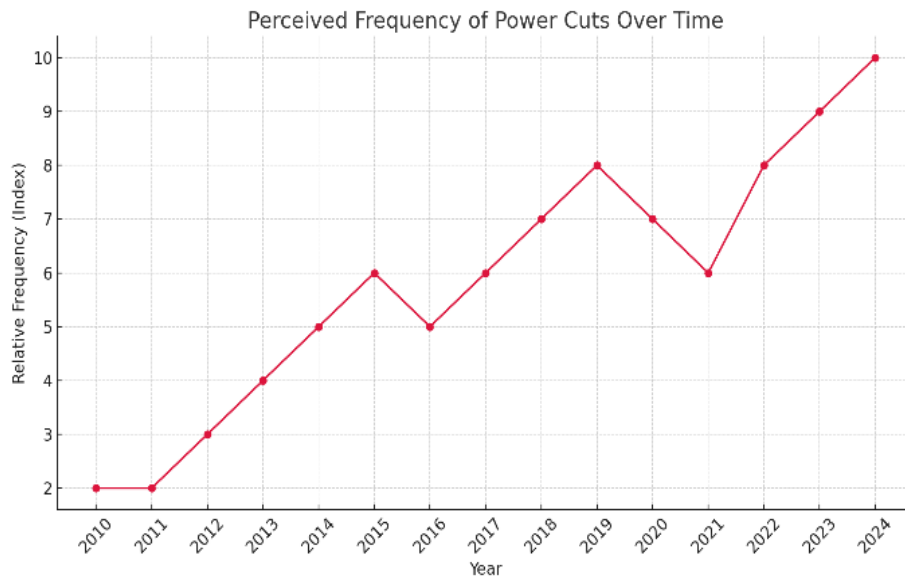


Figure 8.2.2: Perceived frequency of power cuts (Source: Arroyo 2019; Ezquiaga 2023; IndeGranada 2021; Juárez 2023; Ruiz 2021; Sarrión 2021a; Interviews)

During 2010-2015, power cuts began increasing in frequency and duration (see Figure 8.2.2.). Residents initially responded with informal complaints, seeking clarification from the electricity provider, Endesa. However, without a formal movement to demand solutions, these complaints were often dismissed or met with vague reassurances (Informe del Defensor de la Ciudadanía de Granada 2021; Ruiz 2021; interviews.). Meanwhile, Endesa began framing the blackouts because of illegal energy consumption, which diverted attention away from infrastructure failures (Arroyo 2019; Sarrión 2021a; Juárez 2023; interviews). As blackouts became more severe, in 2015-2020, the frustration among residents grew into organized protests. In response, Endesa implemented localized transformer upgrades and minor network reinforcements in some of the most affected areas (Mesa Ciudadana Distrito Norte por la Luz 2022; interviews). These quick fixes provided temporary relief, reducing immediate outages in select neighborhoods. However, by postponing structural grid investments, these actions set the stage for even greater system failures.

Over time, the problem worsened rather than improved, forcing activists to restart their mobilization efforts. By 2021 it had become evident that *Endesa's* temporary solutions were ineffective. The power cuts returned with greater frequency, further exacerbating public frustration (IndeGranada 2021). However, due to the earlier quick fixes, some neighborhoods had experienced temporary stability, leading to a decline in activist engagement in those areas. Meanwhile, *Endesa's* narrative gained credibility, reinforcing the perception that illegal connections were to blame for the problem. As a result, authorities were less inclined to push for structural improvements, and real solutions were once again postponed (Sarrión 2021a). This weakened activist engagement and allowed *Endesa's* justification for system neglect to solidify over time.

Pattern 2: Limits to growth



Figure 8.2.3: Perception of activism and institutional resistance (Source: Informe Anual del Defensor de la Ciudadanía 2021; Gijón 2022; Sarrión 2021b)

Activism in the Northern District has surged during major crises, but its long-term impact has been constrained not only by government intervention, but also by the energy monopoly structure. As can be seen in Figure 8.2.3, From 2010 to 2015 local community protests emerged sporadically, but media coverage remained minimal (interviews). Residents found it difficult to attract institutional attention to their demands (Defensor de la Ciudadanía 2021). In 2016–2020 the movement gained visibility as blackouts became more frequent and severe, prompting some policymakers to discuss energy security and social inequalities (Sarrión 2021b). Activists lobbied for grid infrastructure improvements, but legal barriers and Endesa’s control over the energy sector prevented alternative solutions from gaining traction (interviews). From 2021 to present, European advocacy added external legitimacy to the movement (Gijón 2022), but, without regulatory changes, alternative solutions remained legally constrained (Defensor de la Ciudadanía 2021). Government intervention led to small-scale policy adjustments, such as short-term subsidies, but failed to break Endesa’s monopoly (Sarrión 2021b). This way, while authorities responded to pressure by offering temporary relief, monopoly laws prevented alternative solutions from scaling (García & Madrid 2024), ensuring that activist momentum eventually slowed.

Pattern 3: Shifting the burden

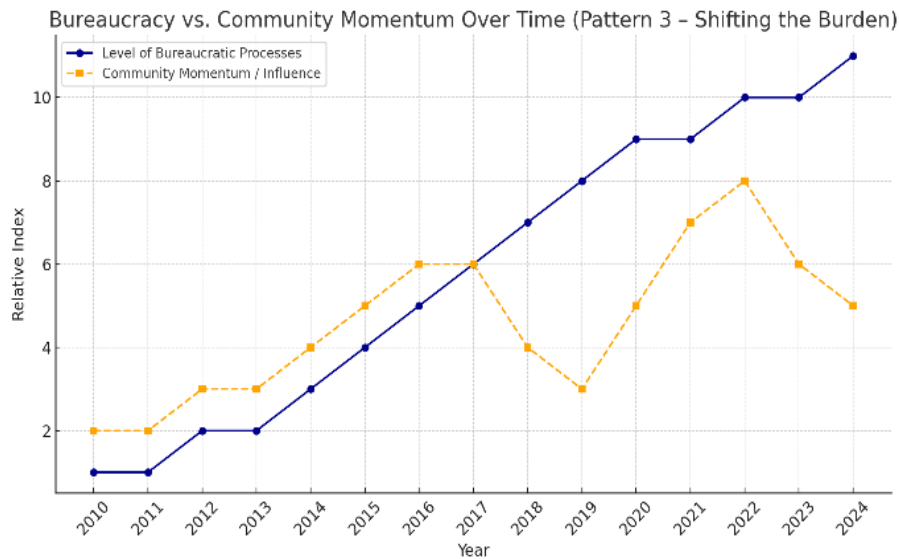


Figure 8.2.4: Bureaucracy and Community momentum over time (Source: Juárez 2024; Sarrión 2022; Valiente & García 2020; Interviews)

Legal processes were initially seen as a pathway to justice but ultimately absorbed activist energy, shifting the movement away from street mobilization toward slow-moving bureaucratic processes. As can be seen in Figure 8.2.4., between 2010 and 2015 activists relied on public demonstrations to demand accountability (Interviews; Valiente & García 2020). Legal efforts were minimal at this stage. In 2016-2020 community organizations began filing lawsuits against Endesa, arguing that blackouts violated consumer rights (Defensor de la Ciudadanía 2021; Sarrión 2022; Juárez 2024). These cases gained media traction but failed to lead to immediate changes. From 2021, the legal process became the dominant activist strategy, leading to a decline in direct protests. Although lawsuits provided institutional legitimacy, they also delayed immediate action, as legal rulings and investigations took years to process (interviews).

The burden shift was mostly onto legal bureaucracy. Court cases absorbed activist energy without generating immediate systemic change, slowing momentum over time.

Dynamics at regime level

The regime-level dynamics in the Northern District of Granada are shaped by the persistent failure of the electricity system, coupled with structural inaction from both authorities and the main utility company, Endesa. At the center of the crisis lies an outdated and overstressed electrical grid that has not been adequately upgraded to meet increasing demand. Rather than invest in systemic infrastructure improvements, Endesa and local governments consistently opted for short-term solutions: transformer replacements, local repairs, and emergency protocols. These solutions temporarily reduced power outages but failed to address the root causes of the problem, leading to the reappearance of power cuts with greater intensity over time (Defensor de la Ciudadanía 2021).

These cycles of temporary response were reinforced by shifting narratives at the regime level. As public dissatisfaction grew, the authorities increasingly framed power cuts because of illegal energy connections, particularly in marginalized neighborhoods (Arroyo 2019; Sarrión 2021a; Juárez 2023; interviews). This discourse allowed them to redirect responsibility away from structural neglect and towards criminalized

users, legitimizing inaction while undermining residents' claims to energy as a right (Article media text only 2024).

Simultaneously, grassroots mobilization emerged as a response to growing frustration. Between 2010 and 2015, public demonstrations were the primary form of resistance, as residents sought accountability through street protests and public denunciations (Valiente & García 2020; Interviews). However, with limited government responsiveness, the movement began to shift tactics. From 2016 onward, community organizations and legal aid groups initiated lawsuits against Endesa, arguing that prolonged power cuts violated basic rights and consumer protections (Defensor de la Ciudadanía 2021; Sarrión 2022; Juárez 2024).

These legal processes were initially seen as a pathway to justice, and indeed, they attracted media coverage and further amplified the issue. Yet this shift toward legal strategies introduced an unexpected dynamic: the burden of action moved from direct mobilization to slow-moving institutional processes. As legal cases accumulated between 2016 and 2020, and especially from 2021 onward, street protests declined. Community energy was absorbed by court procedures and administrative appeals. Although the legal route provided some institutional legitimacy, it also diluted the immediacy and visibility of activist demands. Rulings took years, and the overall pressure on institutions to act decreased. This weakening of direct mobilization further entrenched regime stability, as short-term fixes and narratives blaming illegal users could continue unchallenged.

In 2019, the Spanish government launched the National Energy Poverty Strategy, formally acknowledging energy poverty as a national issue. While symbolically important, the strategy lacked strong enforcement mechanisms, allowing authorities to delay meaningful interventions. The strategy gave the appearance of structural reform without disrupting the institutional status quo. In 2023, pressure mounted again when the European Parliament publicly intervened, urging Spanish and Andalusian institutions to address the crisis. However, even this external scrutiny led only to cautious political reconsideration (Defensor de la Ciudadanía 2021). Economic constraints and entrenched relationships between regulators and utility providers slowed progress once more (interviews).

Throughout this period, media coverage played an ambiguous role. It helped to amplify activist claims, particularly during legal victories or highly publicized outages (Sarrión 2022; Juárez 2024). However, media attention also followed a cyclical logic: it peaked during moments of crisis and faded quickly after emergency responses were implemented. This created a pattern of short-lived public concern, after which institutional attention would wane, and systemic neglect would resume (interviews).

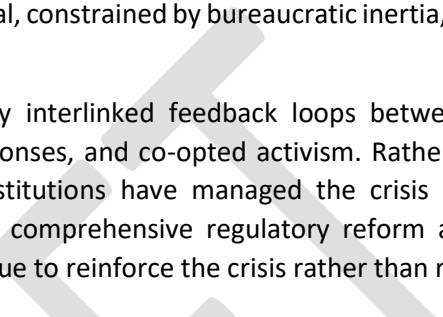
CLD of regime level dynamics

The CLD of regime-level behavior can thus be summarized as follows:

- Power cuts drive public protests, prompting temporary fixes. These fixes reduce blackouts briefly but delay real investment.
- In parallel, government and *Endesa* narratives blame illegal use, shifting responsibility away from institutional failure.

- by interlinked feedback loops between responses, and co-opted activism. Rather, institutions have managed the crisis without comprehensive regulatory reform and are likely to reinforce the crisis rather than resolve it.

by interlinked feedback loops between responses, and co-opted activism. Rather, institutions have managed the crisis without comprehensive regulatory reform and are likely to reinforce the crisis rather than resolve it.



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Kumu link: <https://kumu.io/MarinaFI/co-sustain#cld-regime-nd>

R1: Power Cuts & Infrastructure Neglect

Power cuts trigger → + Community protests → + Endesa implements temporary fixes → +Neglect of structural issues → +Power cuts.

B1: Activism & Institutional Response

Activist Momentum (increases public awareness) → +Public pressure → +Policy reforms (provide temporary relief) → +Institutional resistance → -Activism momentum drops.

B2 (short-term)

Power cuts → +Media attention → +Institutional response (policy declarations and limited action, such as subsidy schemes or emergency coordination tables) → -Power cuts → -Legal action.

R2 (long-term): Shifting the Burden

Power cuts → +Media attention → +Institutional response (lawsuits take over the movement momentum, redirecting towards slow-moving legal battles instead of direct protest action) → +Power cuts → -Legal action.

Niche level

Initiative goal:

The goal of the Northern District Movement against energy cuts is to secure reliable and affordable energy access, challenge institutional neglect, and advocate systemic energy governance reforms.

Pattern(s) of key factor(s) at niche level

Pattern 1: Awareness campaigns and activism growth



Figure 8.2.6: Perception of activism growth (Source: Juárez 2023; Juárez 2024; Defensor de la Ciudadanía 2021; Mesa Ciudadana Distrito Norte por la Luz 2022; Ruiz 2021; Sarrión 2021a; Interviews)

To confront the regime-level issue of persistent power cuts and infrastructural neglect, niche actors in the Northern District (neighborhood associations, civil society groups, and local activists) launched awareness campaigns and grassroots mobilizations aimed at increasing public visibility and institutional accountability. Their goal was to raise awareness among residents, gain media attention, and pressure local authorities and *Endesa* into adopting structural reforms. These awareness-raising efforts are a core niche-level factor that the initiative could directly influence and monitor through turnout at events, petition signatures, and press coverage.

As can be seen in Figure 8.2.6 between 2010 and 2015, this activism was fragmented and reactive, with isolated complaints but no cohesive movement. From 2015 to 2020, in response to worsening blackouts, neighborhood platforms began organizing coordinated protests, community meetings, and legal information sessions, which significantly boosted local engagement and shaped public discourse. The movement's visibility increased; especially as legal advocacy efforts began to emerge.

A key turning point came in 2021, when external support, including from the European Parliament, added legitimacy to local efforts, pushing energy poverty into wider institutional and policy discussions. However, while the niche grew in visibility, bureaucratic resistance and lack of reform outcomes reduced momentum over time. In some areas, temporary technical fixes also discouraged continued participation. These conditions led to fluctuating engagement, marking the beginning of a stop-start pattern that characterizes the niche's long-term behavior.

Despite this, each resurgence of power cuts consistently reactivates awareness efforts, suggesting a niche dynamic that remains responsive, but heavily shaped by the limitations of the regime context.

Pattern 2: Energy access and affordability

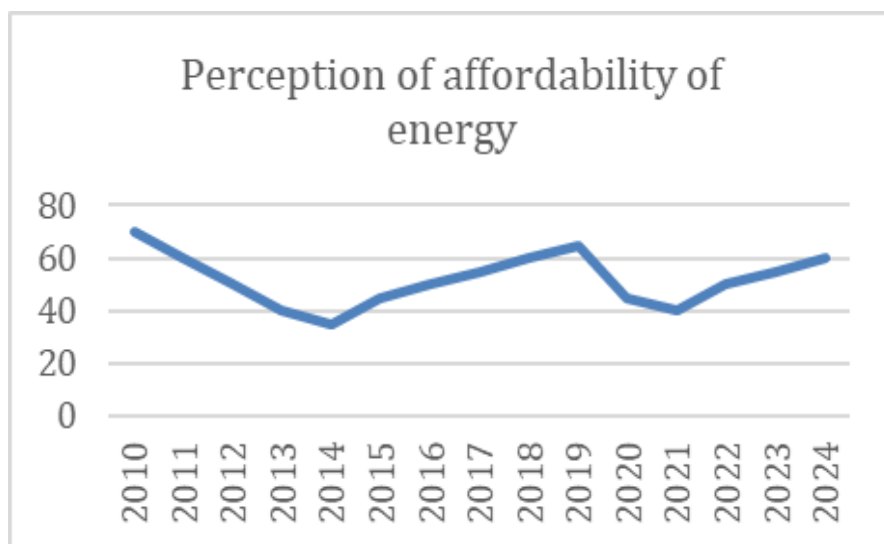


Figure 8.2.7: Perception of affordability of energy (Juárez 2024; Defensor de la Ciudadanía 2021; Mesa Ciudadana Distrito Norte por la Luz 2022; Ruiz 2021; Sarrión 2021a; Interviews)

As part of their efforts to confront the regime-level issue of energy poverty and infrastructural neglect, niche actors in the Northern District focused their initiatives on raising awareness of affordability disparities and advocating for fair and inclusive pricing structures. While they could not directly regulate energy prices, community groups worked within their scope by documenting disconnections, organizing support networks, pushing for subsidies, and calling attention to the inequities experienced by low-income households. These actions aimed to build pressure for systemic change from below, highlighting the social injustice behind energy exclusion.

As can be seen in Figure 8.2.7, between 2010 and 2015, energy access disparities worsened. While electricity prices remained broadly stable, increasing demand and outdated infrastructure led to unreliable access, disproportionately impacting low-income households. Many residents struggled to pay energy bills and faced higher risks of disconnection, which exacerbated household vulnerability. Activism on this front remained limited in this period.

From 2016 to 2023, the affordability dimension of energy poverty became more visible through awareness campaigns, resident testimonies, and advocacy in public forums. Niche actors worked to reframe the crisis not only as a supply issue but as an issue of energy justice and inequality. They lobbied local authorities for energy bill subsidies and pricing reforms, sparking debate about the rights of vulnerable populations to safe and consistent energy access.

From 2024 to the present period, the issue gained new traction with European Parliament intervention, which helped legitimize local demands for structural reform. Nevertheless, authorities responded primarily with short-term affordability measures, such as emergency subsidies, which offered only temporary relief and did not alter the underlying pricing regime. Without comprehensive structural reform, energy poverty persisted and, in some cases, deepened.

As these limitations became clear, niche actors shifted their advocacy from immediate relief toward broader economic justice demands, connecting energy affordability to wider struggles for income equality

and housing rights. This broadened framing helped sustain the relevance of the initiative, even as specific short-term victories remained limited.

Pattern 3: Community-led energy solutions

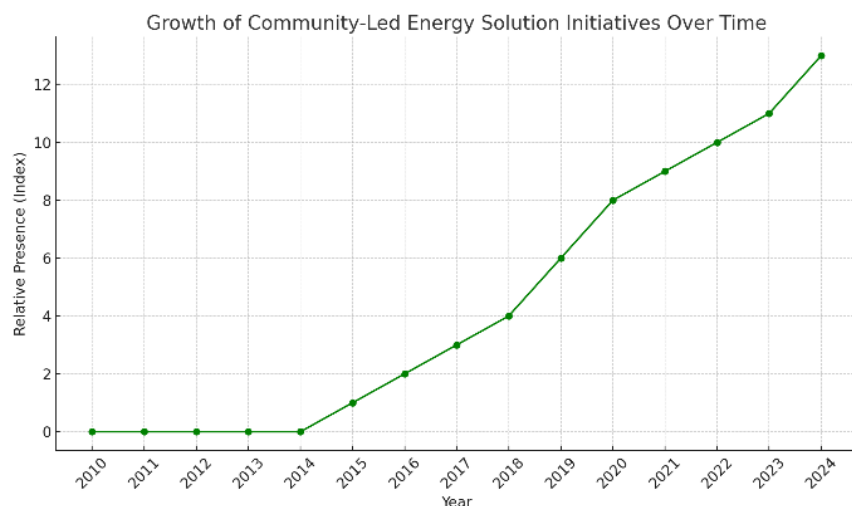


Figure 8.2.8: Growth of community-led energy solution initiatives over time (Source: Juárez 2024; Defensor de la Ciudadanía 2021; Mesa Ciudadana Distrito Norte por la Luz 2022; Ruiz 2021; Sarrión 2021a; Interviews)

Faced with persistent blackouts and ineffective responses from both *Endesa* and public authorities, niche actors in the Northern District began exploring community-led energy initiatives as an alternative pathway to improve energy access and challenge the regime-level monopoly over the electricity system. While they lacked the authority to reform the grid directly, these groups sought to increase local control over energy generation and management, using the tools at their disposal—pilot projects, technical workshops, and advocacy for legal reform—to propose scalable models for decentralized, just energy systems.

As can be seen in Figure 8.2.8, between 2015 and 2020, discussions around alternative solutions began circulating among activists, neighborhood platforms, and supporting NGOs. These discussions were inspired by models from other Spanish municipalities and EU programs, but remained largely exploratory, as there was little institutional support and high regulatory barriers.

From 2021 onward, with the deepening of the energy crisis and the continued failure of short-term fixes, these community actors launched small-scale pilot initiatives, including neighborhood assessments of solar potential and early-stage proposals for cooperatively managed microgrids. These efforts were met with enthusiasm within the movement but also faced legal and technical hurdles - including the difficulty of connecting to the national grid and the lack of enabling legislation for energy communities at the regional level.

In the current window (2024–present), European support for energy communities and national policy shifts (like Spain’s RD 477/2021) have created new opportunities, but the impact in the Northern District remains limited due to bureaucratic inertia, grid instability, and low institutional trust. Still, the initiative has helped to reframe the energy debate, shifting it from a focus on dependency and vulnerability toward energy sovereignty, self-organization, and long-term resilience.

By advocating for community-led solutions, niche actors have not only responded to immediate needs but have also contributed to the reimagining of the energy system—proposing models that could, if scaled and supported, offer a transformative alternative to the dominant regime.

Dynamics at niche level

In response to persistent power cuts and institutional neglect, niche actors in the Northern District - comprising grassroots groups, neighborhood associations, legal platforms, and emerging energy cooperatives - developed a multi-pronged approach to confront regime-level failures. Their efforts aimed to influence energy justice through community awareness, affordability advocacy, legal action, and decentralized energy alternatives.

The initial trigger was widespread power outages, which sparked a rise in community awareness. This led to an increase in protests, petitions, and media engagement, creating external pressure that generated short-term institutional responsiveness. In reaction, authorities offered temporary subsidies and technical improvements, which briefly improved energy affordability but reduced public outrage, slowing further grassroots mobilization. This feedback structure is partly balancing: short-term fixes lowered pressure for deeper reforms.

Simultaneously, legal pathways were pursued. Residents and activists filed lawsuits against *Endesa* and local institutions, resulting in greater policy attention and public visibility. However, like subsidies, the legal route often led to slow progress, absorbing activist energy and delaying direct action. Still, it kept the issue on the public agenda and created a space for community-led alternatives to emerge.

With institutional paths proving limited, some niche actors turned toward community energy discussions and pilot initiatives, such as rooftop solar proposals or small cooperatives. These early experiments increased community trust in alternatives, reinforcing support for scaling decentralized energy solutions. However, regulatory barriers, including restrictive grid-access policies and legal ambiguity, blocked broader implementation. This created a reinforcing loop of innovation and optimism on the one hand, and regulatory limitation on the other.

In this dynamic system:

- Protests and legal action drive visibility and temporary gains;
- Community energy proposals emerge as a longer-term solution but face systemic obstacles;
- Institutional responses remain limited to short-term concessions, creating a cycle of relief followed by stagnation.

Ultimately, the niche-level strategy in the Northern District combines reactive mobilization with strategic experimentation, striving to challenge the dominant regime not only through pressure but through proof-of-concept alternatives that could be scaled—if systemic barriers are lifted.

CLD of niche level dynamics



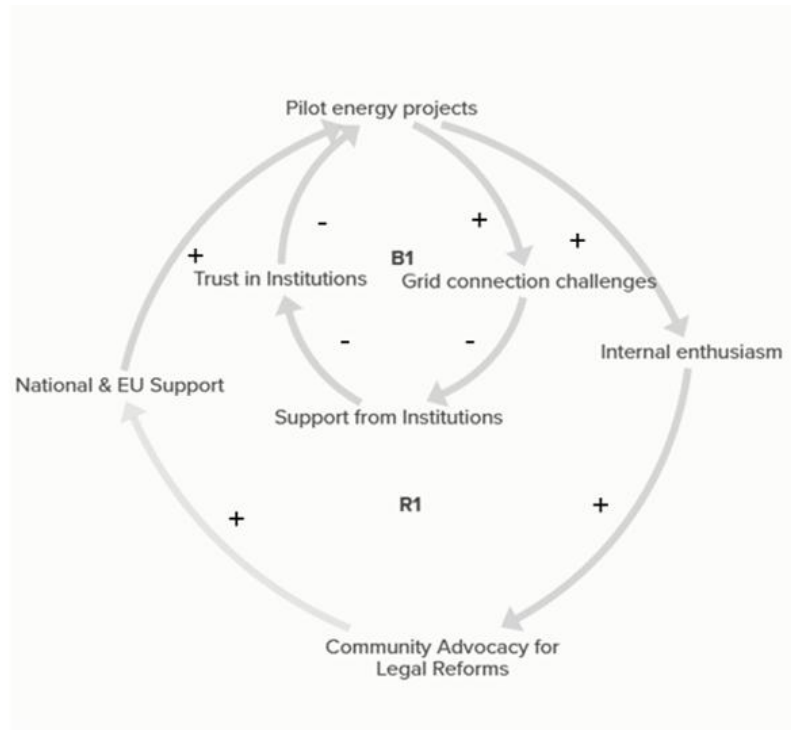


Figure 8.2.9: CLD Niche level dynamics

B1: Pilot energy projects → + Grid connection challenges → - Institutional support → - Institutional trust → - Pilot projects

R1: Pilot Projects → + Internal Enthusiasm → + Community Advocacy for Legal Reform → + National & EU Support → + Pilot energy projects

8.2.5 Summary and Conclusion

8.2.5.1 Origin & Evolution of HE

The Northern District of Granada has long faced persistent power outages and inadequate energy infrastructure, creating a backdrop for what would become a grassroots energy poverty movement. By the late 2000s, many households in the district were regularly left without electricity for hours or even days, severely disrupting daily activities and posing risks to residents' health. The residents' frustration grew as local authorities and the primary energy provider, *Endesa*, employed only short-term fixes. Rather than addressing aging infrastructure or devoting resources to meet actual demand, official statements increasingly emphasized illegal connections and excessive consumption. This narrative placed blame on marginalized communities while diverting attention from systemic neglect.

A pivotal moment came around 2009, when neighborhood associations in areas such as *Casería de Montijo* and *La Paz* began organizing informal protests in response to the outages. These groups demanded consistent electricity supply and called for government oversight of *Endesa*. Nevertheless, momentum was relatively modest until 2011, when Spain's broader 15M (*Indignados*) Movement inspired new forms of collective action. Encouraged by the atmosphere of social mobilization, residents in the Northern District

launched a more cohesive platform—often referred to as the Platform Against Power Cuts—seeking visibility and policy reform. Although this window of opportunity galvanized some support, divisions within the community and limited political follow-through meant that transformative change remained elusive.

As the 2010s progressed, power cuts persisted. Grassroots activism re-emerged stronger around 2015–2016, coinciding with heightened media coverage on energy poverty across Spain. Demonstrations became larger, and local newspapers began to shift their framing—moving away from portraying the situation as mere technical failure to acknowledging it as a fundamental right issue. The formation of unified neighborhood networks also helped residents voice their concerns to local authorities, regional institutions, and eventually, the European Parliament.

Key turning points arrived in 2019 and 2020. The Spanish National Energy Poverty Strategy (2019–2024) formally recognized energy access as a policy priority and thus raised hopes that the Northern District’s plight would finally be addressed. Simultaneously, the Granada City Council began discussing emergency plans and partial infrastructural upgrades, pressured by both the media and growing public protests. Although these measures provided limited improvement, *Endesa* continued to frame illicit consumption as a root problem, dampening broader solutions. In response, residents pressed for more systemic interventions—ranging from upgrading transformers to creating tighter regulations that would hold energy companies accountable for service quality.

By 2021–2022, the movement’s efforts had captured national and European interest. Advocates emphasized that persistent blackouts compromised health, education, and broader social well-being, affirming energy as a fundamental human right. Spurred in part by letters from the European Parliament urging Spanish authorities to resolve the crisis, limited additional reforms occurred in 2023–2024. Though progress remains incomplete, the residents’ movement has reshaped public discourse on energy poverty. It has spotlighted both infrastructural deficiencies and policy gaps, cultivating a growing recognition—locally and beyond—that energy access is not merely a technical question but a critical matter of social justice and equitable citizenship.

8.2.5.2 Organization & Activities of HE

The residents’ movement in Granada’s Northern District is predominantly organized around neighborhood associations and the Platform Against Power Cuts. While individual associations emerged in distinct neighborhoods (such as *Casería de Montijo* and *La Paz*), they gradually formed a loose but coordinated structure to tackle the district’s persistent power outages and broader energy poverty issues.

Core Organizational Structures:

- Neighborhood Associations: Each neighborhood association—like *Asociación de Vecinos Nueva Cartuja*—maintains a small leadership group responsible for day-to-day coordination. These groups organize regular gatherings in community centers or civic halls, where residents share concerns and plan collective responses.
- Platform Against Power Cuts: The platform functions as an overarching coalition that brings together various associations. Through monthly assemblies, it pools resources, strategizes protests, and centralizes communication with institutions.

Decision-Making Processes:



Decisions usually arise from open assemblies, where community members can present problems or proposals. Depending on urgency, specific committees (e.g., legal, media, or infrastructure) are formed to carry out actions such as compiling reports or contacting local officials. Although leadership often falls to long-standing community figures, assemblies aim for broad participation to ensure transparency and sustain grassroots legitimacy.

Key Activities:

Protests and Demonstrations: Public demonstrations outside government buildings or the energy company's offices have become central tactics. By drawing media attention, the movement pressures local authorities and *Endesa* to address power outages and invest in long-term grid improvements.

Legal and Administrative Actions: Activists engage lawyers to file complaints or petitions at local, regional, and even European levels. These legal steps, sometimes coupled with appeals to the European Parliament, underscore the human rights dimension of reliable electricity access.

Community Workshops and Support: Associations run workshops on energy-saving practices, billing issues, and procedures to apply for social tariffs. While they recognize that the underlying infrastructure problems require higher-level policy solutions, these sessions build community resilience and inform residents of their rights.

Collaborations with Advocacy Groups: The platform often coordinates with civil society organizations, such as human rights groups and environmental NGOs. These partnerships have broadened the movement's visibility, framing energy poverty as a social justice issue rather than a purely technical problem.

Media engagement: Over time, local media outlets went from criticizing residents to amplifying their demands. Movement spokespeople regularly provide updates to newspapers and radio channels, reframing blackouts as systemic neglect rather than isolated incidents.

External Support and Resources:

While grassroots fundraising covers basic needs—e.g., printing materials and organizing meetings—some projects also receive indirect support through EU-funded initiatives that target energy poverty. Additionally, local civic centers offer spaces for workshops and assemblies, helping minimize logistical costs.

Overall, the Residents' Movement in the Northern District of Granada has cultivated a flexible yet robust organizational network. Driven by open assemblies, united by a shared platform, and supported by legal, media, and advocacy collaborations, the movement's diverse activities revolve around a single objective: ensuring consistent, dignified access to electricity for the district's most vulnerable communities.

8.2.5.3 *Goals & intended outcomes of HE*

A primary goal of the residents' movement in Granada's Northern District is to secure reliable and affordable electricity for neighborhoods long plagued by power outages. While consistent energy supply is the most immediate objective, the movement also aspires to address systemic neglect by local authorities and energy providers, highlighting the right to electricity as a basic human need rather than a mere commodity. By framing their struggle in terms of social justice, they aim not only to resolve technical deficiencies but also to reshape public policy and discourse on energy poverty across Spain.

Ending power cuts and infrastructure neglect:



Above all, the movement calls for comprehensive upgrades to outdated grid infrastructure. Residents want energy companies—particularly *Endesa*—to invest in long-term solutions instead of offering superficial fixes or attributing outages solely to unauthorized consumption. Improved transformers, modernized cables, and proactive maintenance are seen as essential steps toward stable electricity for all households.

Fair treatment and accountability:

Many participants in the movement are motivated by a desire to shift the narrative around who is responsible for the power outages. They seek to move beyond the stigmatizing view that links blackouts to alleged illegal connections. Instead, they want policymakers and energy suppliers to acknowledge structural inequities and prioritize solutions that benefit law-abiding consumers who still experience frequent cuts. Through protests, legal complaints, and negotiations, activists hope to secure accountability measures that hold both municipal government and energy firms responsible for providing consistent service.

Legal protections and policy reforms:

Another major ambition is to strengthen legal frameworks at local, regional, and national levels. Members of the movement advocate for policy interventions that explicitly protect vulnerable households and enforce minimum service standards. By collaborating with national advocacy groups and, at times, appealing directly to European institutions, they aim to embed energy poverty provisions—like those outlined in Spain’s National Energy Poverty Strategy—into binding legislation with real enforcement mechanisms.

Building community resilience:

Beyond demanding infrastructural improvements, the movement conducts workshops to inform residents about billing, social tariffs, and energy-saving measures. In doing so, they hope to mitigate short-term hardships while awaiting systemic reforms. Strengthening internal cohesion—through monthly assemblies, resource-sharing, and partnerships with human rights organizations—helps ensure the movement can persist despite slow policy progress.

Long-term vision:

Ultimately, activists envision a Northern District free from recurrent blackouts, where stable energy supply fosters better health outcomes, educational attainment, and overall quality of life. They see their local struggle as part of a broader campaign for energy justice in Spain, expecting their efforts to serve as a blueprint for other communities grappling with similar inequities. In the long run, they intend to reshape how governments and corporations view energy—transforming it from a source of profit and sporadic policy debate into a guaranteed right underpinning social welfare and human dignity.

8.2.5.4 *A multilevel perspective on the CAI using the MLP visualization*

Figure 8.2.10 shows the MLP visualization of the HE “Energy poverty movement in the Northern District of Granada”. Within this framework, the movement illustrates how grassroots initiatives can challenge and partially transform a socio-technical regime shaped by broader landscape pressures. In this historic example, the core problem was persistent energy poverty and frequent power outages, especially in marginalized neighborhoods. Over time, local communities mobilized against electricity cuts, framing access to energy as a fundamental right rather than a commodity.

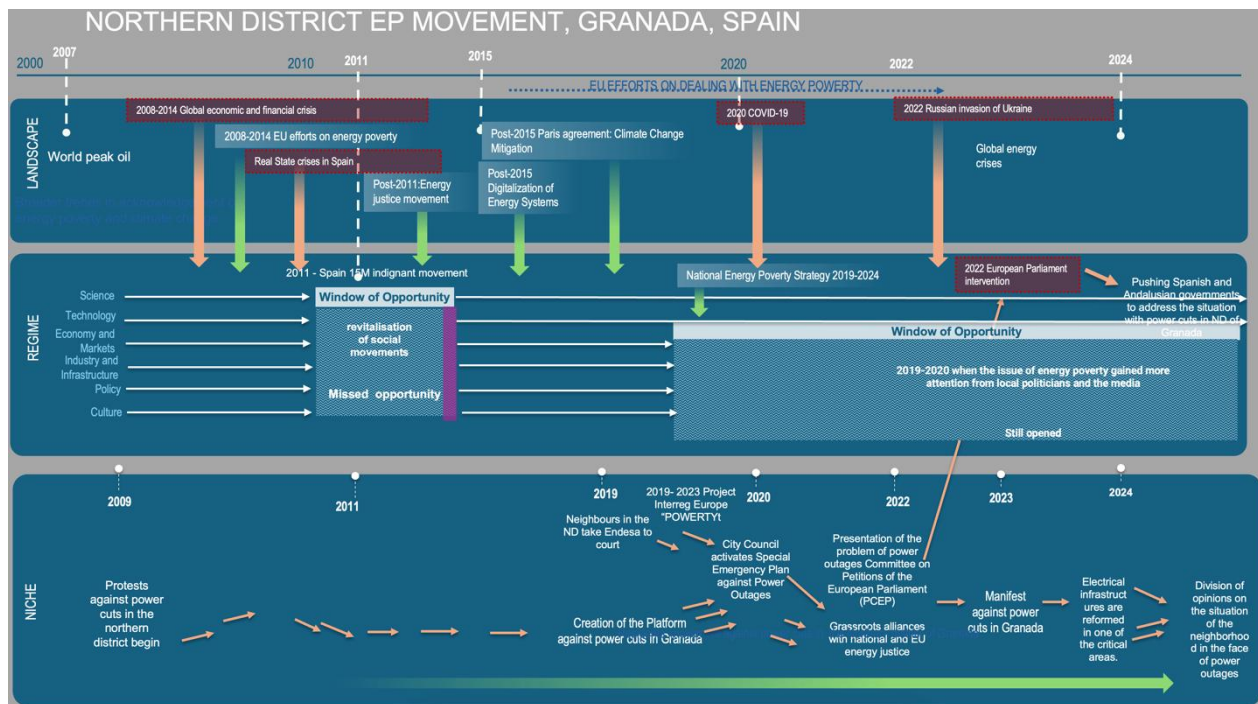


Figure 8.2.10: MLP visualization Residents' movement in the Northern District of Granada, Spain

What kind of transition has occurred from a multi-level perspective?

Landscape Level: Global and European trends created both destabilizing and stabilizing pressures. The 2008 financial crisis exacerbated socio-economic vulnerabilities, heightening awareness of energy poverty across Europe. Subsequently, broader EU strategies—such as the focus on energy justice and gradual climate change mitigation commitments—put the spotlight on ensuring equitable access to electricity. In addition, the global energy crisis following geopolitical tensions underscored the urgency of resilient energy infrastructures.

Regime Level: Spain's energy regime, characterized by traditional utilities (most notably *Endesa*), long-standing infrastructural challenges, and a regulatory framework slow to prioritize vulnerable consumers, experienced growing pressure. Although the 2019–2024 National Energy Poverty Strategy signaled official recognition of the issue, it did not immediately resolve the Northern District's grid deficiencies or the social inequalities underlying power cuts. Local authorities often offered temporary infrastructure upgrades, but these partial fixes rarely addressed systemic neglect. Over time, however, intensified scrutiny—particularly from national media and the European Parliament—began to weaken the status quo and open space for new energy governance models.

Niche Level: Grassroots mobilization emerged as a protected space for experimenting with collective claims and alternative solutions. Residents formed neighborhood associations and advocacy platforms to demand reliable electricity supply. They collaborated with human rights organizations, healthcare professionals, and lawyers to frame electricity as a public health and social justice concern. This coalition-building broadened their influence: local protests evolved into legal actions, and, eventually, transnational networks, such as Interreg Europe POWERTY, lent further credibility. Crucially, these niche actors pressured regime institutions, destabilizing the old narrative that blamed outages solely on illegal consumption.

How has this transition occurred?

Driven by residents' persistent efforts, the movement gained momentum around 2011, leveraging public protests and engaging the media to highlight severe living conditions in the Northern District. Over time, two main "windows of opportunity" propelled their cause. First, the post-2011 wave of social justice activism across Spain galvanized collective action, allowing local groups to connect with larger national movements. Second, from 2019 onward, mounting European-level attention (including a letter from the European Parliament) and the rollout of the National Energy Poverty Strategy legitimized calls for structural reforms.

Although the transition is not complete, changes are visible. Niche initiatives successfully reframed energy as a human right, compelling local authorities to introduce more robust technical upgrades and spurring partial policy shifts. At the same time, repeated public scrutiny dented *Endesa's* initial resistance, prompting some infrastructure investments. In effect, a new energy governance model—one that recognizes vulnerable communities' needs—has begun to emerge. However, major hurdles persist, such as ensuring stable funding, overcoming entrenched political inertia, and fully integrating social justice principles into formal energy policies.

In sum, the residents' movement in Granada's Northern District reveals a gradual but meaningful transition, where bottom-up mobilization, supported by broader political and social shifts, has begun to reshape how energy provision is viewed and governed. While ongoing struggles highlight the regime's resistance, sustained niche activism continues to press for deeper transformation across local and national scales.

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8.3 Energy poverty movements in Spain: Energy Poverty Alliance (ES)

8.3.1 Interviews

8.3.1.1 Documentation of application of the method

Six interviews were done between April 2024 and January 2025 as follows:

1. **Code APE01 - Expert in energy poverty**, collaborator of APE, participant in the Energy Poverty Board
 - Duration: 1h
 - Date of the interview: 16/4/2024
 - In person
2. **Code APE02 - Spokesperson of APE**, involved in the ILP promoter group, campaign and negotiation with the political parties, still involved in APE
 - Duration: 1h
 - Date of the interview: 19/9/2024
 - Online
3. **Code APE03 - Representative of Catalan CSOs**, supporter of the Energy Poverty law (Law 24/2015), participant in the Energy Poverty Board
 - Duration: 1h
 - Date of the interview: 16/1/2025
 - Online
4. **Code APE04 – Spokesperson of PAH**, involved in the ILP promoter group, campaign and negotiation with the political parties.
 - Duration: 1h
 - Date of the interview: 17/1/2025
 - Online
5. **Code APE05 – Activist of APE**
 - Duration: 1h
 - Date of the interview: 22/1/2025
 - Online
6. **Code APE06 – Activist of APE**
 - Duration: 1h
 - Date of the interview: 22/1/2025
 - Online

The interviews revealed insights from the CAI itself and from relevant stakeholders involved in the promotion and passing of the Law 24/2015, as one of the main achievements of APE.

8.3.1.2 Results

Description and objective of the CAI

The economic and financial crisis of 2008 that severely hit Spain from 2012, brought social movements and civil society in general fighting for the right to decent housing to the forefront. These movements increasingly encountered cases where mortgage issues were set aside by concerns about precarious or missing housing supplies. Simultaneously, the critical discourse against the energy oligopoly by the environmental sector and civil society organizations (CSOs) advocating for energy democracy was not sufficiently resonating with the citizens. In response to this urgent situation, in February 2014, during the late years of the economic and financial crisis and its most severe impact on vulnerable groups,

neighbours' organizations and social platforms like the Plataforma de Afectados por la Hipoteca (PAH) joined forces. At the time, PAH was leading the fight to guarantee housing rights, and in this context energy supplies were also identified as a separate fight (this will be further developed in the next sections).

"Faced with this situation, we decided to reach out to organizations made up of people experiencing utility disconnections. We soon realized that many individuals who couldn't afford their mortgage or rent also struggled to pay for basic utilities. To better understand the issue and explore possible actions, we called for an initial meeting. Housing organizations confirmed that many people were facing supply cuts but didn't know how to handle them, as their primary fight had been against the banks. At that time, the housing movement was mainly focused on evictions and actions against banks, only later expanding to fight against investment funds and other speculative actors. However, as supply disconnections became more frequent, they recognized the need to confront electricity and water companies, which had initially seemed untouchable" (Interviewee APE02).

Hence, together, these movements, under a common narrative that framed the right to basic supplies (water, energy, and decent housing conditions) as essential, created the Alliance Against Energy Poverty (APE) (Guiteras, 2018). Founded in Barcelona in February 2014, APE is a grassroots social movement engaged in political activism advocating for energy rights, working mainly in the Catalonia region.

"The APE movement emerged from individuals involved in various social struggles, particularly those advocating for access to water, as well as people working on a different energy model and housing rights within Barcelona's neighborhood associations. The main driving force came from these organizations, which had long been denouncing the effects of water privatization and the energy oligopoly. This was not just a theoretical issue, it rather had a clear and tangible impact: many people lacked guaranteed access to basic services, leading to numerous water and electricity disconnections" (Interviewee APE02).

APE's initial goal was to support, assist, and advocate the right to energy. The movement started with a clear task of political advocacy, aiming to bring the need to end water, electricity, and gas cuts to the political agenda and to highlight the responsibility of the companies managing basic supplies. This effort led to the approval of the first (popularly called) "energy poverty" law in Europe (Law 24/2015), a major achievement that marked a clear commitment to the fight for basic utilities.

At regime level, an overlapping of several crises (economic, social and territorial due to the increase of the pro-independence traction) created a climate of political instability that facilitated the adoption of the energy justice narrative by political actors. This ultimately led to the approval of the Law from very different political actors (further explained in the System Mapping section). The enactment of the 24/2015 Law *on urgent measures to address the housing and energy poverty emergency* established the protection of individuals and family units at risk of residential exclusion from supply cuts that may be imposed by water, electricity, and gas suppliers due to non-payment. Since its deployment, the power distribution companies cannot interrupt supplies to households at risk of residential exclusion without first requesting a vulnerability report from Social Services. The law also tries to address in a very limited way the shared responsibility for the debt of those affected by energy poverty between the public administration and the energy supplier. According to Tirado Herrero et al. (2021), the Law 24/2015 prevented over 200,000 basic supply cuts and benefited more than 100,000 vulnerable families between 2015 and 2020.

Although the law protects against energy cuts, it cannot act upon the debt generated by the non-payment of the bills. For a specific period, this issue was partially resolved through an ad-hoc agreement between Endesa, the City Council of Barcelona, and the Catalan Government. For the period, the debt of 35,518 Catalan households was condoned for a total amount of 38,793,524 euros, and of this amount, Endesa covered 73% (Navarro, 2023). However, it only solved the debt issue of those families who were Endesa clients, and for a certain period, so the structural solution for the accumulated debt remains unsolved. This limitation comes from the competencies of the regional government, as Catalonia does not have the legal authority and competences to enact these aspects, so the accumulation of debt remains an outstanding issue for vulnerable households and it is one of the remaining APE's struggles.

Still operative nowadays, APE provides guidance, support, and counselling to those individuals affected by energy poverty. APE is also trying to tackle Spanish level policymakers, so it is broadening their advocacy scope to the whole country.

Relation to the issue of sustainability and climate change

APE is deeply aligned with sustainability goals, particularly in energy justice, social equity, and climate resilience. Its core mission, ensuring universal access to energy and water, directly supports the broader sustainability agendas, including the Sustainable Development Goals (SDGs) and EU climate policies, by addressing the intersection of social rights and environmental sustainability (Interviewee APE01).

Since its foundation, APE has focused on tackling energy poverty, recognizing it as both a social and environmental issue. Vulnerable households often resort to inefficient, polluting energy sources, increasing emissions and environmental degradation. By advocating for fair energy policies and enforcing anti-disconnection laws (Law 24/2015), APE actively supports a just energy transition, ensuring no one is left behind (Interviewee APE02). APE also highlights how climate change disproportionately affects low-income communities, who have fewer resources to adapt to extreme weather events.

A key aspect of APE's sustainability contribution is its fight against energy poverty, pushing for stronger regulations on energy providers and advocating for energy as a fundamental human right. As a social movement, APE consistently links energy poverty to climate justice, integrating social justice into climate action through public campaigns and media engagement. Additionally, APE is deeply rooted in grassroots activism, working closely with housing movements (PAH), water rights groups (Aigua és Vida), and neighborhood associations (Federation of Neighborhood Associations of Barcelona - FABV). Unifying these struggles that come together and inherently affect the life of the most vulnerable collectives, APE addresses the intersection of energy poverty, housing rights, and climate resilience, reinforcing the need for systemic solutions to social and environmental inequalities.

Niche characteristics

APE has challenged the aid-dependent systemic approach towards collective empowerment. Instead of viewing affected individuals as passive recipients of social aid, APE has emphasized active participation and leadership by those directly impacted.

"When we first started, it was easier to mobilize affected individuals because the problem was much more urgent and pressing. Engaging people wasn't difficult, as we formed an alliance with the PAH, which was already made up of individuals experiencing these issues firsthand. There was an active movement with a strong social base, and we built APE on that experience. At the time, many people

faced immediate energy disconnections if they couldn't pay, making it a critical priority. Although utility issues never received the same media attention as the housing struggle, mobilization was easier back then. Today, disconnections still happen but with less intensity, and people prioritize other struggles, as financial precarity forces them to make difficult choices about where to focus their energy and efforts.” (Interviewee APE02).

APE emerges within a thriving landscape of social justice movements and local and regional environmental and social CSOs, at a time when power dynamics are being intensely challenged by overlapping crises—economic, social, and territorial—across the region. In response to these crises, informal political participation among citizens reaches its peak, while public awareness is particularly heightened and receptive to social justice messages.

APE continues to pressure public authorities to uphold these rights and hold major utility companies accountable for addressing energy poverty among their users, advocating for universal access to essential water and energy services (APE, 2025).

Overall, APE actions have fulfilled empowering functions, but also achieved shielding functions as well, in particular when focusing on the push for accountability on policymakers and big corporations and the moral justification of the energy justice narrative. APE has also supported the concept of energy as a right in the public discourse, making it easier for individuals to frame their personal stories within this rights-based approach.

8.3.2 Textual Analysis

8.3.2.1 Documentation of application of the method

For this method, a first collection of the **text corpus** was carried out. This text corpus has gathered a total of **30 texts**:

- 7 materials *about* the CAI
- 4 materials *from* the CAI
- 19 materials *indirectly related* to the CAI
 - 3 materials framed within the landscape level
 - 9 framed within the regime level perspective
 - 7 framed within a generalist approach

From these textual sources, **15 have been analyzed in depth** following the harmonized template that gathers input on several key topics such as who is the speaker, who is spoken to, what is spoken about and how, etc.

8.3.2.2 Results

Meta-data

The energy poverty debate in Catalonia is largely shaped by activists, researchers, NGOs, CSOs and journalists. Energy was first framed as a basic right in 2014 in the document *L'Energia com a dret. Com afrontar la pobresa energètica (Energy as a Right: How to Tackle Energy Poverty)* (Garcia, M., 2014), published by the Social Third Sector Platform (Taula del Tercer Sector). Afterwards, APE has emerged as a leading voice, actively advocating for energy rights and regularly featuring in reports, media, and policy discussions. Researchers and the Catalan ombudsman (Síndic de Greuges) analyze the effectiveness of Law 24/2015 and grassroots mobilization, with some academic experts framing energy poverty within broader

political and economic contexts. Online media platforms, such as El Crític and Social.cat, amplify APE's campaigns, while local governments, particularly the Generalitat de Catalunya, tend to be reactive rather than lead efforts for change.

Despite strong engagement from civil society and academia in the public debate to frame energy as a basic right, some voices remain absent. Energy companies are often portrayed as obstacles, reinforcing perceptions of an energy oligopoly, while national-level institutions show little proactive involvement in the media, leaving regional governments to handle the issue. Additionally, firsthand testimonies from those directly experiencing energy poverty are scarce, often mediated through APE (to preserve their personal exposure) rather than directly included in media or research.

Over the past decade, APE has become central to the fight against energy poverty, much like the *Plataforma de Afectados por la Hipoteca* (Platform of those affected by mortgages, PAH) in housing rights. Their activism has gained widespread recognition. Spokespersons from APE keep the issue in public discourse (Allué, C. et al., 2019; Campuzano et al., 2021), reinforcing the shift in perception from a temporary financial crisis to a systemic injustice requiring coordinated action.

Media and academic narratives have shifted after the passage and enforcement of the Law 24/2015. Before 2018, reports focused on short-term struggles, winter hardships, and price hikes. The passage of Law 24/2015 marked a shift, proving activism could drive policy change but also highlighting enforcement gaps. Post-2018, coverage deepened, addressing corporate accountability and systemic failures. The 2024 metro protest from APE underscored the persistence of the energy oligopoly, while research exposed bureaucratic barriers and corporate resistance to change.

Ultimately, energy poverty is now recognized in the public discourse of several social agents as a governance and inequality issue.

Manifest content

APE has become a key player in tackling energy poverty in Catalonia, which is observed both by its representation in the analysed texts and also by its actual negotiation capacity with the government and its social impacts. However, its visibility remains uneven. It is well recognized in activist, advocacy, and research circles but less prominent in mainstream media, which rarely covers the issue in depth. Most attention comes from Non-Governmental Organisations (NGOs), independent media, and academia, while major outlets largely overlook it.

APE and its allies, like other Catalan Civil Society Organisations (CSOs) and social movements like PAH, frame energy poverty as a human rights issue, emphasizing empowerment and legal protection. Their activist-driven discourse contrasts with media and policy reports, which focus more on debt relief, policy implementation, and corporate-government negotiations. These two approaches frame the issue in very different ways, from a struggle for justice to a technical matter of regulation.

Initially, the narrative efforts centered on mobilization, protests, and legislative change, leading to the ILP on energy poverty and Law 24/2015. After 2018, activists shifted focus to enforcing existing protections rather than pushing for new laws.

Latent content



The energy poverty debate in Catalonia is deeply tied to political activism, driven by social movements, NGOs, researchers, and online media platforms. Groups like APE and PAH have exposed energy oligopolies, pushed for legal protection, and supported affected communities. Their efforts led to the landmark Law 24/2015, securing protections against energy cuts.

However, resistance from energy corporations and political institutions remains strong. Companies like Endesa continue to lobby against regulation, often aligning with political parties to maintain the status quo, which is reflected in their public discourse. Political dynamics in Spain and Catalonia have further complicated structural change, as shown by the rejection of PAH's first two Popular Legislative Initiatives (ILPs), highlighting how social justice issues remain a low priority and how they were disregarded until the crisis of energy supply cuts was exposed by APE and other agents in the media. Also, as highlighted by some actors, almost 10 years after the approval of the Law 24/2015, the Catalan Government has not yet developed the reglementary deployment to ensure effective guarantees to safeguard vulnerable people, and the issue of who pays for the accumulated debt of the families remains unsolved (Síndic de Greuges, 2023).

Currently, energy poverty remains largely absent from mainstream media, leaving many affected citizens unaware of their rights. Although alternative media covers it, the issue struggles to gain national attention.

The key challenge is ensuring that legal protections are fully enforced, which represents, at the same time, the main narrative around energy poverty and APE. Since energy regulation falls mainly under Spanish central jurisdiction, Catalonia's legal situation remains unchanged. The advocacy efforts led by APE have been instrumental in catalyzing policy advancements and elevating the issue within media discourse.

Methodological reflections

One of the biggest challenges has been finding texts in mainstream regional and national newspapers. While activist materials, NGO reports, and independent media offer valuable insights, major outlets—at least during this research—largely ignored or “deprioritized” the issue. Even when energy poverty did receive mainstream attention, such as during the campaign for Law 24/2015, little coverage was found, clearly outlining the positions of public institutions and corporations.

Another obstacle was the disappearance of many media articles from 2014–2015. When analysing some texts, they referenced specific articles from that period, but when clicking and searching for those articles, they were not available anymore, making analysis more difficult. This raised the question of whether it was simply due to outdated news archives or if it pointed to a deeper issue concerning the historical memory of digital journalism.

8.3.3 Social Network Analysis

8.3.3.1 Documentation of application of the method

The Social Network Analysis has built on the previous work done in the first research phase that served at contextualizing the HE within the MLP theoretical framework. For this phase, the use of various methods and data sources captured a first picture of the scale, dynamics and relationships between the various elements that constitute the niche in which this historical example occurred. The results are gathered in the *Context and Stakeholders Analysis for Historic Examples of Political Participation* report (Deliverable 1.2).

Building upon this first research phase, those findings have been complemented and largely enriched with two other methods, namely the Textual Analysis and the Semi-structured interviews to key representatives of the HE. This second phase has helped in understanding the type, intensity, impact, and interests of the relationships between the different stakeholders, in addition to identifying new ones and better detailing the different interactions.

The Social Network Analysis has been depicted in a dedicated diagram for the APE HE, along with an excel file gathering the breakdown of the different stakeholders' relationships.

8.3.3.2 Results

In Catalonia, the fight against energy poverty, as a result of the APE formation in 2014 and framed within the opening of the window of opportunity to change the regime with the implementation of the popularly called “Energy Poverty Law” (Law 24/2015), unique in Spain, is shaped by a complex network of relationships among social and political activist movements, NGOs, government institutions, energy companies, and political actors.

At the **niche level**, APE and PAH are at the forefront of this struggle, which form the backbone of the energy justice movement, and who portray an intense cooperative relation since the creation of APE. Working closely with many other CSOs, they mobilized communities, raised awareness, and pressured policymakers through the Popular Legislative Initiative (ILP) promoter group, ultimately securing the passage of Law 24/2015. Their efforts were deeply collaborative, relying on moral, cultural, and human resources to ensure that the most vulnerable had a voice in energy policy.

Beyond traditional social movements, trade unions and Catalonia's pro-independence CSOs played a key role by backing the APE and PAH campaign to boost the ILP acceptance. APE and PAH leveraged the power of these social segments to reach a wider segment of society that they would not target directly, but the relationship between them was cooperative and horizontal. Using their strong local networks and political influence, they actively supported APE and PAH in promoting the ILP. A major contribution was their help in gathering signatures— nearly three times the required 50,000 —to bring the ILP on housing and energy poverty to the Catalan Parliament. Pro-independence CSOs, often advocating for a more inclusive Catalonia, mobilized their grassroots networks, organized petition drives, and ensured the necessary support for the initiative. This alliance between actors from very different sectors and aims (environmental and social movements, trade unions, and pro-independence CSOs) demonstrated the power of cross-sector collaboration in reaching larger segments of society, effectively challenging corporate influence and driving legislative change, ultimately leading to the approval of Law 24/2015 (Interviewees APE04, APE01, APE02, APE05).

Regarding the **niche maturity**, it is observed that this cross-sectoral collaboration is key to understanding the early success of a recently born initiative like APE, which in only one year was able to lead a successful ILP (with the wide public campaign it entails, intensive in moral, cultural and human resources) and make the Catalan Parliament approve it by majority. This cross-collaboration is also crucial in seizing the window of opportunity created at the regime level by the multiple crises in Catalonia, which led a highly polarized Parliament to reach a consensus on addressing the energy poverty emergency, thanks (in part), to the pressure enforced from very different civil society segments to the different political parties. APE was formed initially from activists linked to PAH, a grassroots movement already existing and having led two ILP attempts in recent years, so APE could capitalise also on this experience to make the most of their actions to maximise their impact. In 2015, with the transfer of some PAH and APE activists into the

Barcelona City Council and Catalan Parliament, their energy justice narrative became more entrenched in the public debates.

At the **regime level**, the main actors are the Catalan and Spanish parliaments and governmental agencies, which have the legislative power, the energy corporations, which have the power to shape the market and direct influence public opinion, and the grassroots movements at Spanish and Catalan level that had an upraise during this period (“Indignados / 15M” movement at Spanish and Catalan level, and pro-independence CSOs at Catalan level, who had a strong influence over Catalan political parties at that time).

The greatest challenge comes at regime level from energy corporations that, forming an energy oligopoly and being the most powerful actors at regime level, control material and financial resources. While they have relationships with public agencies and the Government of Catalonia on regulatory matters, their relationship with advocacy groups is deeply conflictual. In Spain, energy corporations hold significant power and influence, particularly when compared to grassroots social movements. These companies often have strong ties to political institutions, access to substantial financial resources, and control over key infrastructure, which allows them to shape policy decisions and public discourse around energy transition. In contrast, social movements— despite their growing presence and activism —struggle to gain comparable visibility or influence, facing structural barriers to participation in decision-making processes. This imbalance creates a democratic deficit in the energy debate, where corporate interests frequently outweigh community voices. On the other hand, it clashes with APE, revealing the policy tensions between grassroots demands and governmental limitations.

Meanwhile, the political sphere in Catalonia mirrors this division. Left-wing parties, more aligned with social movements’ demands, were more eager to listen and support. In contrast, right-wing parties representing corporate interests often opposed the demands coming from the ILP promoter group. On the one hand, the Catalan government (Generalitat de Catalunya) dealt with institutions representing the CSOs and NGOs in Catalonia, like the Taula d’Entitats del Tercer Sector Social (Catalan Third Social Sector Platform) and other CSOs, the Catalan Ombudsman, and representatives from municipalities, aiming to mediate solutions and offering a space of exchange, the so-called Energy Poverty Board. The Taula d’Entitats del Tercer Sector Social, an association of several social CSOs with a solid background in advocating for social rights through a dialogue-oriented approach with different actors, emerges as a crucial intermediary, fostering cooperation between institutions and activist movements (Interviewee APE03). Specifically, it played a key role when Endesa threatened to cut electricity for vulnerable citizens in the summer of 2018, demanding municipalities cover unpaid debts. Until then, APE and social actors had focused on enforcing the law, preventing disconnections and pushing companies to assume family debts through agreements with the Generalitat. Endesa’s ultimatum caused an uproar, forcing the Generalitat to respond. This crisis led to a crucial alliance between APE and the Taula d’Entitats del Tercer Sector Social, securing Endesa’s agreement that led to the debt condonation of 35,000 families.

The window of opportunity was mainly created through the overlapping of three crises: an economic crisis triggered from the landscape level, a social crisis resulting from the austerity measures and other impacts of the financial crisis (higher unemployment, real estate bubble, etc), and the territorial crisis between Spanish and Catalan governments triggered by an upraise of pro-independence traction among society during a period that eventually led to calling for elections before the due date.

The Association of Environmental Sciences (ACA) and the Catalan Ombudsman (Sindicat de Greuges) indirectly supported APE’s efforts by providing research-based evidence on energy poverty. Their data-

driven insights helped shape policy decisions and raise public awareness on energy equity and energy justice.

Ecoserveis has been laying the groundwork for public services on energy poverty since the early 2000s, studying the issue and designing and implementing public services, from training social workers to providing energy audits and contracting support for vulnerable households. This experience led to the 2015 pilot of Barcelona's Energy Advisory Centers (EAC), in partnership with the NGO ABD (also a member of the Taula del Tercer Sector). As Catalonia's first universal public service on energy rights, it later became a key reference for enforcing the 24/2015 Law.

Barcelona City Council fully supported APE from 2015 onwards, actively combating energy poverty by implementing the law (Interviewee APE02). This commitment is reflected in the consolidation and increase of resources to the Energy Advisory Centers (EACs). The role of the Barcelona City Council is also important for its symbolic and moral endorsement of the 24/2015 principles, which being the capital of the region, have served as a positive example of its implementation.

8.3.4 System Mapping

8.3.4.1 *Documentation of application of the method*

Similar to the SNA, the System Mapping has built upon the foundational work from the initial research phase, which helped contextualize the HE within the MLP theoretical framework. Again, building on the initial research phase, these findings have been further enhanced and expanded Semi-structured interviews (outlined in section 8.3.1) and the Textual Analysis (described in section 8.3.2).

Interviews have been particularly valuable for the System Mapping, allowing for a deeper exploration of how the main niche and regime factors have evolved. They have also provided important insights into the cause-and-effect relationships between several key factors.

This has led to the narrative description of the key factors presented below, along with the Causal Loop Diagrams, which offer a visual representation of these factors and are also annexed.

8.3.4.2 *Results*

REGIME LEVEL

REGIME LEVEL ISSUE THAT LED TO NICHE DEVELOPMENT

The 2008 financial crisis exacerbated economic hardships in Spain and Catalonia, disproportionately affecting vulnerable groups and fueling social frustration. In the energy sector, there was a significant rise in energy disconnections by corporations to vulnerable households, which heightened public awareness of the impacts of energy poverty and the lack of access to essential supply, and the lack of regulatory protection in this domain.

PATTERNS OF KEY FACTORS AT REGIME LEVEL

Pattern 1: Social unrest

How the crisis strengthened activism, increasing the intensity of the social unrest (manifested through an increase of the number of social movements, and the number of protests)

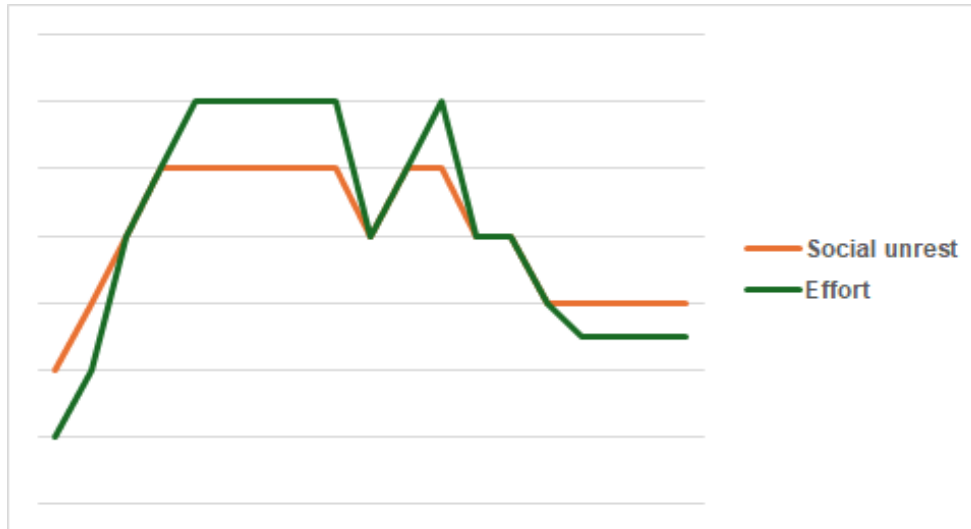


Figure 8.3.1: Development of social unrest and effort over time

The 2008 financial crisis triggered a wave of economic hardship across Spain and Catalonia, but its impact was particularly severe on vulnerable groups. Rising unemployment, wage stagnation, and austerity measures exacerbated social inequalities, rendering many households unable to afford mortgages repayments and utility expenses. Hence, the social frustration with the system grew. However, this frustration did not emerge in isolation. By the time the crisis hit, Spain and Catalonia already had an existing foundation of grassroots activism, which channeled the social demands to decrease inequalities.

In parallel with the financial crisis, Catalonia, which had a strong activist tradition, started to see the growth of social movements specifically focused on housing rights. Movements like *V de Vivienda* (2006) had already been protesting against the real estate speculation and unpayable mortgages (that increased with the real estate bubble), while anti-austerity protests were gaining traction in response to rising living costs and declining job security. This existing activist base laid the foundation for what would soon become a wave of social mobilization in both Spain and Catalonia. When the financial crisis hit, mass evictions and energy cuts rapidly increased, energy poverty became a daily reality for citizens, and social inequalities became impossible to ignore. In response, organized social resistance intensified. By 2009, the *Plataforma de Afectados por la Hipoteca* (PAH) emerged as one of the most influential housing rights' movements in Catalonia, using civil disobedience and legal advocacy to prevent evictions and demand stronger housing protections. PAH is key to understanding the success of APE in passing a law later on, as PAH had been growing and becoming enrooted at the local level over all Catalonia, and had already promoted two ILPs. The ILP campaign undertaken later on by the collaboration of PAH and APE took advantage of this locally rooted network to put pressure on the Catalan parliament from their own parties from their local level branches. It also took advantage of the knowledge from PAH in promoting the previous two ILPs.

A turning point came in 2011 with the rise of the Indignados (15M, DemocraciaRealYa, etc.) movement, inspired by global protests against economic inequality and injustices. Thousands of citizens took to the streets and occupied public squares, calling for an end to austerity, greater protection for the working class against austerity measures. This moment solidified the activist network that had been growing in response to inequality, bringing together groups focused on housing, and social justice under a shared platform of resistance. As these movements gained support, a new struggle emerged: energy poverty and action to stop the increasing energy supply cuts. Many of the same families affected by evictions were also struggling to pay for electricity and heating, facing energy disconnections that further deepened their vulnerability. Recognizing this huge gap in vulnerable collectives' protections, activists and social organizations expanded their focus beyond housing, leading to the creation of APE in 2014. APE, working alongside PAH and other grassroots movements, used direct action and advocacy to bring energy poverty into the political agenda. This activism culminated in the passage of Law 24/2015, which banned energy disconnections for vulnerable households, a major victory for social movements. The campaign for the ILP was led by a promoter group composed of several movements but mainly led by the PAH and APE. PAH had already tried to pass two ILP in the past only for housing, and in the third attempt they incorporated an article on energy poverty. APE was born in 2014 and the law was approved by 2015, so it is key to consider that APE capitalized on all the work done previously by the PAH (Interviewees APE01, APE 02, APE 03 and APE 04).

Following the successful passage of the ILP and the Law, and the widespread perception that social movements had achieved a critical objective—preventing energy cuts—social unrest declined. However, the enactment of the Law did not immediately translate into the cessation of energy cuts, as the necessary regulations for its implementation had not been developed. Energy companies claimed they lacked clear guidance on how to apply the Law. As mentioned by an activist from APE, *“there we understood that passing a Law does not mean anything by itself and that we should keep on pressuring for its actual enforcement”* (Interviewee APE02).

It was not until 2016, when a woman tragically lost her life due to energy poverty—her electricity supply had been cut off, and she was using candles to light her home—, that social unrest resurged. In response, APE launched a strong media campaign to highlight how proper enforcement of the Law could have prevented her death. Facing public pressure and unwilling to be held accountable for such tragedies, both the government and energy companies began complying with the Law and implementing the Precautionary Principle, leading to a decline in energy cuts (Interviewee APE02).

Subsequently, social unrest subsided once again, and APE's activities stabilized. Additionally, as Spain and Catalonia's economic situation improved, the intensity of social unrest and the movements channeling it also reached a more stable state, at least in the energy poverty domain.

APE continued its advocacy actions and started new ones focused on community empowerment, like their periodic collective energy advice sessions. They have also done some actions to influence policy at Spanish level, although they are not rooted in other Spanish regions, and they declare that it is more difficult for them to access Spanish-level politicians. They have also gone for advocacy at European level by creating alliances with other entities or coalitions like the Right to Energy Coalition with the goal of making pressure to include bans on energy cuts in EU regulations (interviewee APE02).

Archetype discussion:

Considering the main features of the **Limits to Success** archetype, this pattern shows how after initial victories (ILP passage, Law 24/2015), challenges in law enforcement (regulatory gaps, energy companies resistance) emerged, limiting the direct impact of social movements. The resurgence of social unrest in 2016 (after the tragic death due to energy poverty) highlights how initial success faced systemic barriers, requiring further activism to ensure policy implementation.

Pattern 2: Political Instability

How overlapping crises (economic, social and territorial) opened a window of opportunity

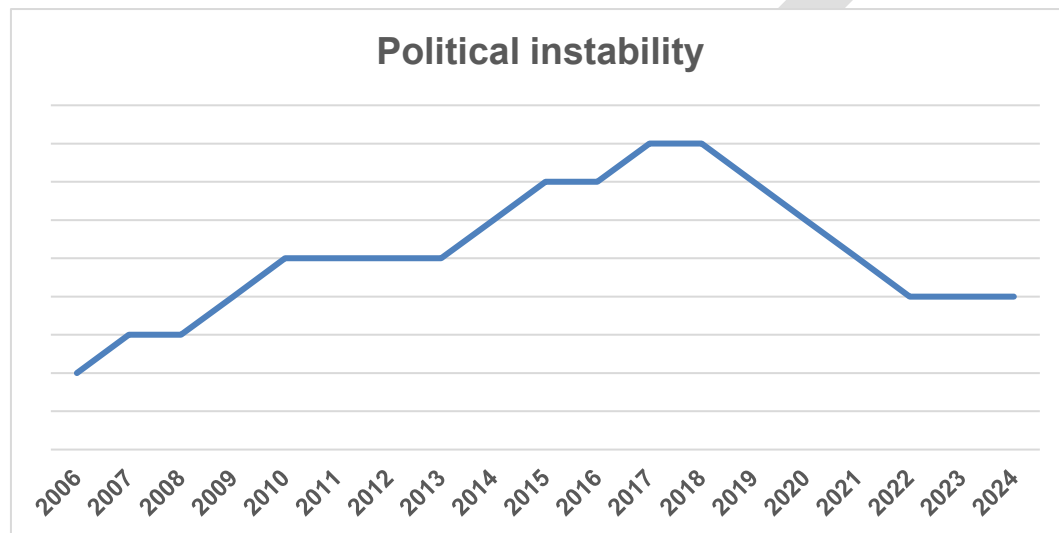


Figure 8.3.2: Development of political instability over time

The economic crisis of 2008 did more than expose financial vulnerabilities, it intensified long-standing political tensions between Catalonia and the Spanish central government. As austerity measures deepened economic hardship, many Catalans began to perceive fiscal injustice, arguing that their region contributed more to Spain's economic recovery than it received in return. This sense of unfairness fueled a growing demand for independence, as many saw sovereignty as the only way to break free from Madrid's economic policies and build a more just and self-sufficient system. Against this situation, the Catalan government (although also accountable for cuts in welfare) actively started to frame independence as the solution to social inequality, linking it directly to the fight against austerity. Some pro-independence parties built their discourses around social justice and economic stability, arguing that separation from Spain would allow Catalonia to implement stronger protections for the Catalan citizens and for the most vulnerable ones. In their narrative, remaining under Madrid's control meant continued economic hardship and limited autonomy to implement social policies. The Spanish government reaction to these developments only escalated the conflict further with the Catalan government. The Spanish government reacted by reaffirming its constitutional authority, blocking efforts toward self-determination, preventing Catalan independence referendums, and even suspending Catalonia's political autonomy for seven months in an unprecedented application of Article 155 of the Spanish Constitution. This pushback reinforced the idea

that Spain was obstructing Catalonia's ability to govern itself effectively, adding fuel to the pro-independence movement and thus escalating the conflict and increasing political instability.

Within this unparalleled political climate, some social movements saw an opportunity to align their struggles with the broader independence discourse. Organizations like APE and PAH, which had been fighting for energy justice, sought support in the Catalan pro-independence social fabric, and strategically embedded energy poverty demands into the independence movement in the public debate of how a pro-independent Catalonia would be (Interviewees APE01, APE02, APE04). It was a time where citizens' assemblies and debates over Catalonia's political model were taking place daily both in the media and in the streets, with a very high engagement of citizens from very different profiles. Many of these engagement actions were mediated or supported by pro-independence CSOs (Omnium Cultural, Assemblea Nacional Catalana, ANC). PAH, APE and other social organizations decided to push for the ILP with signatures collected also from these major Catalan pro-independence CSOs (Omnium Cultural, ANC), who had a big influence over citizenship at that time. The alliances with pro-independence CSOs helped APE and PAH to gather the signatures needed to present the ILP in the Catalan parliament (Interviewees APE02 and APE04). They achieved almost three times more signatures than the threshold required to pass the ILP and obliged the parliament to discuss on the topic (50.000 signatures is the minimum, they gathered almost 150.000), showcasing the broad social support of the ILP to the members of the parliament. They also used the widely spread network of activists of PAH and the pro-independence CSOs at the local level to pressure local governments, who in turn pressured their own parties at Catalan level to take part in the ILP demands on housing and energy poverty (Interviewee APE04). As stated by one of the interviewees, *no one wanted to be the only Party voting against it* (Interviewee APE04), as pro-independence parties had in turn their own power fights for pro-independence electors.

The fight for independence became intertwined with the fight for social justice, turning energy poverty, housing rights, and economic policies into a possibility for sovereignty with a direct consequence of escalation of tensions between Spain and Catalonia, and within Catalonia itself, leading to snap elections due to this deep political crisis. This political instability offered a window of opportunity to APE to increase the adoption of the energy justice narrative among political actors.

Archetype discussion:

The **Escalation** archetype is the primary fit because of the increasing tensions between Catalonia and Spain in a context where several crises are intertwined (economic, social and territorial crises). The economic crisis led to an increased pro-independence sentiment, with a peak when the first consultation was implemented in 2014 and when the Catalan-institutionalized (but not recognized officially by the Spanish government) referendum was held in 2017. This led the Spanish government to suppress Catalan political competences in 2017, being the moment of maximum tension between the Catalan and Spanish governments in recent history, which led to stronger pro-independence mobilization. Each action from one side triggered a stronger counter reaction from the other, reinforcing the cycle. The Spanish government's suppression of Catalan autonomy efforts intensified the conflict rather than de-escalating it, pushing more people toward the independence movement and their adopted narratives. Overall, **this political instability paved the ground for the window of opportunity at regime level by facilitating the approval of the ILP.**

Success to the Successful could help understanding how leveraging pro-independence networks and amplified APE's influence. Pro-independence civil society organizations (Omnium, ANC) had an extensive activist base and mobilization capacity that went beyond the typical PAH and APE social segments, and which PAH and APE leveraged to collect ILP signatures and pressure political actors.

Pattern 3: Political/legal protection for vulnerable households

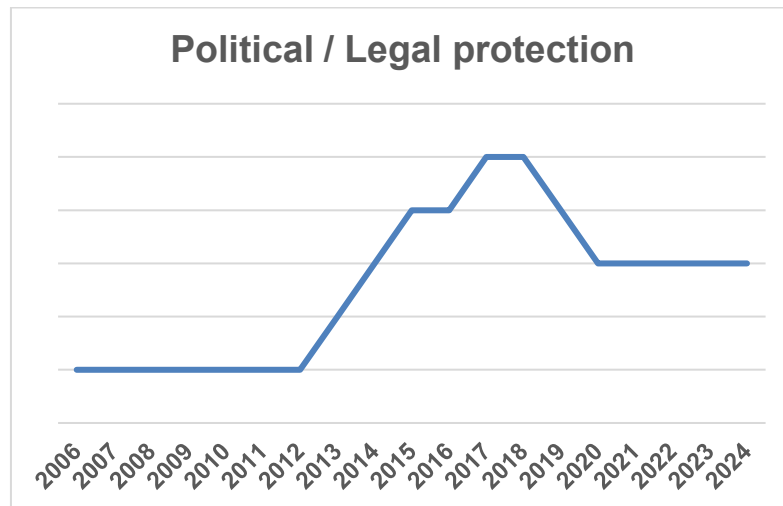


Figure 8.3.3: Development of political and legal protection for vulnerable households over time

Energy Poverty Law (Law 24/2015) and the limits of legal protection

During the economic crisis, a surge in energy cuts and disconnections left thousands of vulnerable households without access to essential services such as electricity, gas, and water. This exacerbated poverty and inequality, pushing many families into even more precarious living conditions. In response, social movements were mobilized, organizing direct actions to prevent disconnections and pressuring Catalan policymakers to intervene. Their efforts led to the adoption of Law 24/2015, a pioneering measure designed to protect vulnerable consumers from energy supply cuts.

A key innovation of the law was the introduction of the Precautionary Principle, requiring energy companies to consult Social Services before disconnecting a household due to unpaid bills. Companies could not proceed with disconnections until social services confirmed that the household was not in a vulnerable situation.

Despite its approval, the law was initially neither enforced by the Catalan government nor followed by energy companies, who claimed that a clear implementation protocol was missing. However, in 2016, a tragic incident marked a turning point—a woman died after using candles to light her home due to a disconnected energy supply. In response, APE launched a campaign arguing that her death could have been prevented if Law 24/2015 had been properly enforced. This event shifted the dynamic, leading the government to demand accountability from energy companies, which ultimately began complying with the law.

After this, the enforcement of the law provided immediate relief, significantly reducing the number of energy disconnections. However, while it ensured continued energy access, it did not address the underlying problem of affordability in the long term. As a matter of fact, the vulnerable households were

protected from energy cuts but at the same time they accumulated unpaid bills, shifting the issue from supply cuts to growing financial debt (Interviewee APE02).

The law does not cover the debt condonation. This was not included in the energy poverty article of the ILP as it would have gone beyond Catalan competencies, and the Parliament could have rejected the Law using this argument. The Law could only include that the Catalan government should make efforts to sign agreements with the energy suppliers to decide on who assumes the debt generated by the unpaid bills, which is something that almost 10 years later has only been achieved with one of the energy companies and only for a certain period (Interviewee APE01).

As a result, many vulnerable households continue to accumulate debt, with the uncertainty of who will ultimately be responsible for covering it, further exacerbating their debt anxiety. Additionally, nearly a decade after the law's approval, the specific regulations for its deployment are still not in place (interviewee APE01). Both factors contribute to long-term legal uncertainty.

At the same time, structural and jurisdictional limitations weaken the long-term effectiveness of Law 24/2015. Since main competencies on energy regulation remain under the Spanish central authority, the Catalan government lacks a full legislative control over energy policies, making it difficult to implement comprehensive financial measures in the long term. Thus, while Law 24/2015 can be considered a milestone in the fight against energy poverty, its long-term impact is until nowadays constrained by both institutional competencies and the still unsolved financial burden of vulnerable families regarding the debt condonation, highlighting the limits of this regulatory protection in fully eradicating energy poverty.

Archetype discussion:

This pattern illustrates how a well-intended policy can mitigate immediate harm but fail to address deeper systemic issues, ultimately leading to new challenges (debt accumulation). Without structural changes in financial and jurisdictional policies, the cycle of energy poverty persists, **Shifting the burden** to other issues instead of resolving the root cause. The immediate problem (energy disconnections) was addressed through regulatory action (Law 24/2015), providing short-term relief to vulnerable households. However, the underlying root cause (financial hardship and affordability) remained unresolved. The structural limitation—the lack of jurisdiction at the Catalan level to legislate financial compensation or debt forgiveness—meant that policymakers only tackled the symptom (disconnections) but not the cause (inability to pay).

Some elements of **Limits to Success** could also apply. The law was initially effective in reducing disconnections, demonstrating early success. However, institutional constraints (Spain's central authority over energy regulation) and the lack of full financial measures limited its long-term impact to address energy poverty. The law's enforcement remains incomplete due to the absence of specific regulations and the slow progress in agreements with energy companies, hindering its full potential.

DYNAMICS AT REGIME LEVEL

Loop 1 - The convergence of multiple **crises** in Catalonia—social, economic, and territorial—led to a weakened social welfare system, which directly impacted energy-vulnerable households by **increasing energy disconnections**. These crises fueled **social unrest**, creating fertile ground for **intensified activism** within existing CAIs like PAH, and the emergence of new ones, such as APE. The expansion of these social justice movements, alongside growing support for pro-independence CSOs and their cross-sectoral

collaboration, resulted in a surge of **advocacy efforts** through a broadly supported Popular Legislative Initiative (ILP). As a result, **legal protections against energy cuts for vulnerable households were strengthened** with the approval of the ILP that constituted the Law 24/2015, which significantly **reduced energy disconnections**. However, while the law prevented supply cuts, it also left unresolved the issue of **debt accumulation**, increasing financial uncertainty for vulnerable families and, in turn, further fueling social unrest.

Loop 2 - Simultaneously, these crises intensified Catalonia's long-standing pro-independence movement, leading to **greater social support for pro-independence CSOs and political parties**. This surge in pro-independence sentiment escalated tensions with the Spanish government, creating a period of **heightened political instability**. Within this climate of political uncertainty and intense public debates over Catalonia's political model, the **energy justice narrative gained traction** among various political actors. This **broad political alignment** ultimately facilitated strong institutional support for the **approval of the ILP** on the housing and energy poverty emergency that **decreased energy cuts but increased debt anxiety** in vulnerable households, fueling **social unrest**.

CLD of regime level dynamics

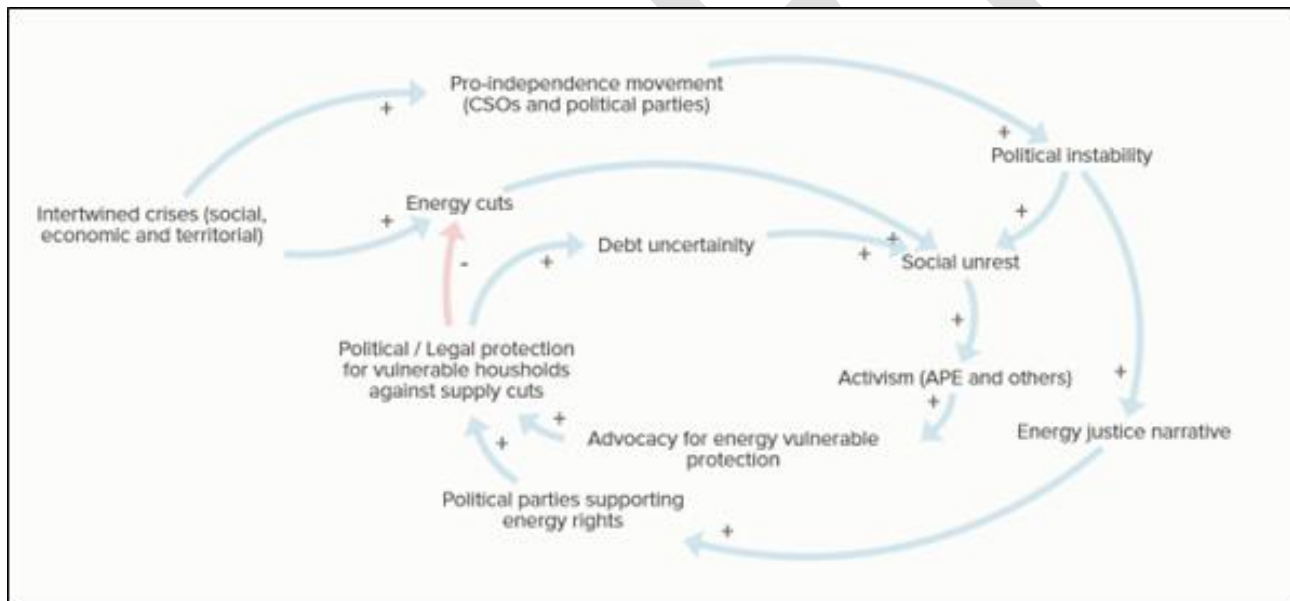


Figure 8.3.4: CLD of regime level dynamics

Loop 1 (Balancing): Energy cuts → + Social unrest → + Activism (APE and others) → + Advocacy for energy vulnerable protection → + Political / Legal protection for vulnerable households against supply cuts → - Energy cuts

Loop 2 (Reinforcing): Social unrest → + Activism (APE and others) → + Advocacy for energy vulnerable protection → + Political / Legal protection for vulnerable households against supply cuts → + Debt uncertainty → + Social unrest

NICHE LEVEL

INITIATIVE GOAL:

APE advocates for universal access to essential water and energy services, ensuring that no one is deprived of these basic needs due to financial hardship. By pressuring governments and holding large utility corporations accountable, APE fights against energy supply cuts for vulnerable households and pushes for stronger protections. Beyond advocacy, APE challenges corporate power, promotes energy justice, and empowers citizens by equipping them with knowledge about their rights and the energy system.

PATTERNS OF KEY FACTORS AT NICHE LEVEL

Pattern 1: Energy justice narrative

From grassroots activism to local policy influence

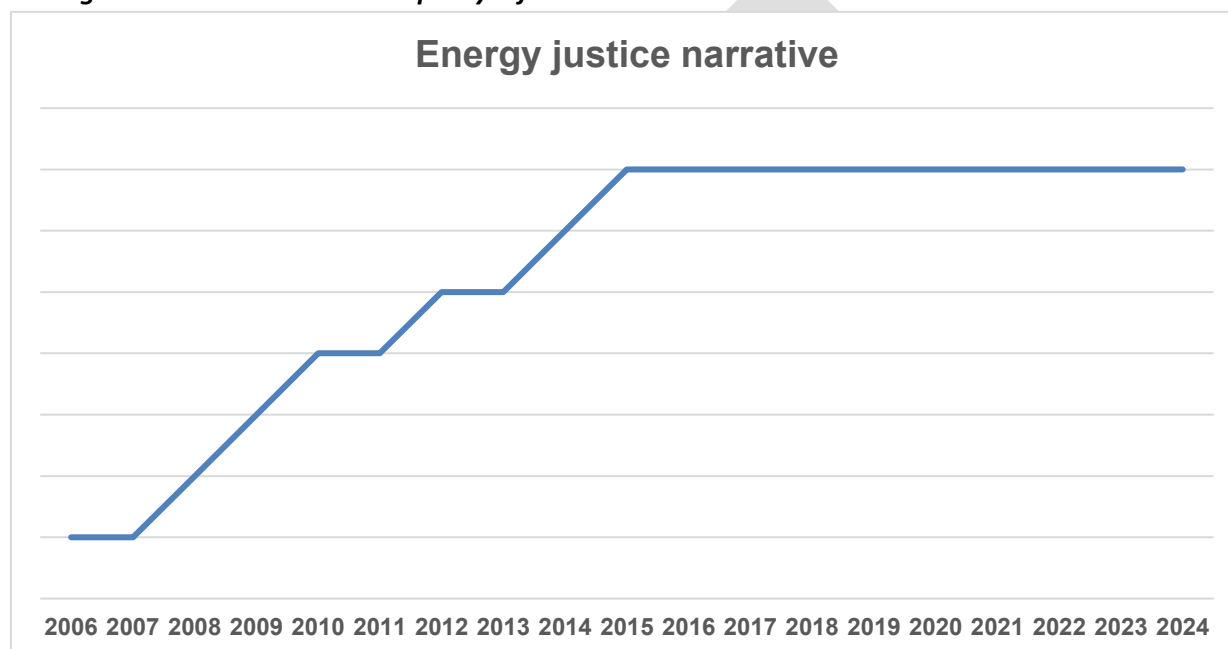


Figure 8.3.5: Development of Energy justice narrative over time

What began as grassroots activism against social injustices in energy gradually evolved into a more institutionalized political influence at the local level. Over time, APE's mission and values transitioned from street protests to directly influence policy advocacy and institutional measures, shaping regional and local governance and legislation. This change was achieved both by positioning the topic into the public agenda, and also by the involvement of activists into the lead of political parties that emerged from the crisis and won elections in Barcelona (and gained traction at Catalan level).

APE initially focused on advocacy to guarantee energy justice, successfully pushing for legal protections against energy cuts for the vulnerable (Law 24/2015). After the law's passage, it expanded its work to include community support, offering regular collective advisory sessions in neighborhoods to educate residents on energy rights, and thus expanding and consolidating the energy justice narrative to the general public.

Additionally, APE has also collaborated with research institutions to study energy poverty and regularly uses media campaigns to expose power dynamics in the energy sector, also consolidating the energy

justice narrative through different strategies and collaborating with different types of stakeholders. While its primary focus remains in Barcelona, it also engages at the regional level to keep energy justice on the public agenda. More recently, APE has extended its advocacy to the Spanish level, leveraging temporary energy protections introduced during COVID-19 to push for long-term policies safeguarding vulnerable households across Spain, and thus trying to expand the energy justice narrative beyond Catalonia.

As APE gained visibility and social support, they began to establish direct relationships with policymakers at regional and local level. This process was accelerated with the 2015 election of Ada Colau (former lead member of V de Vivienda and PAH) as Mayor of Barcelona through the local Party *Barcelona En Comú* (which had regional influence at Catalan level through the regional Party *Catalunya En Comú*), whose administration included key persons from social movements and CSOs that had been working on energy poverty. Through this second window of opportunity, activists who once challenged institutions from the outside got into public offices and shaped policy from within. This shift allowed social movement stances not only to influence the local political agenda, but also to reframe access to housing, energy, and water as fundamental rights rather than market commodities.

However, this institutionalization also brought challenges and trade-offs. As social movements became embedded within local political structures, they faced legal constraints (as Catalonia does not have competences on energy matters) and they also had to negotiate with private corporations which often resisted the change brought by Law 24/2015 especially in terms of debt condonation.

At the same time, despite the significant achievement of passing a law that introduced the Precautionary Principle and explicitly recognized energy as a fundamental right, energy poverty remains an unresolved issue due to the limited scope of energy-related competences. Nonetheless, the institutionalization of social movements has enhanced their capacity to influence both policy and public opinion, ensuring that energy rights became a key issue not only in public discourse but also in political debates. By entering the Barcelona City Council, activists were able to translate their struggles into more concrete measures, demonstrating how social movements can reshape power structures and political regimes from within, while consolidating grassroots narratives.

Archetype discussion:

APE's journey towards achieving energy justice can be seen through two contrasting archetypes: ***Success to the Successful*** and ***Limits to Success***.

Initially, APE's advocacy (closely interconnected with several existing social movements and CSOs) successfully led to the creation of Law 24/2015, a groundbreaking piece of legislation that ensured protections against energy disconnections for vulnerable households. This early victory from APE framed energy as a fundamental right and set the stage for APE's subsequent actions. Following the law's passage, APE expanded its efforts, holding community advisory sessions and running media campaigns to raise awareness about energy rights and further cement its role as a key player in energy justice. These actions not only helped APE reach more people but also solidified its position as a leading advocate in the field. As APE continued to build on its successes, it entered institutional politics. The election of Ada Colau, a former PAH and V de Vivienda member (social movements strongly linked to APE), as Mayor of Barcelona, provided a significant opportunity to influence policy directly from within the political system. This transition allowed APE to integrate its energy justice narrative into formal political discourse, further enhancing its credibility and capacity for change. Each success built upon the previous one, starting from

the ground created by other movements like PAH, granting APE more credibility, resources, and opportunities to influence policy, shift public discourse, and reshape governance on energy justice. An early victory reinforced a cycle of growing influence and resources to channel social stances and make them part of the political agenda for a more inclusive and just governance (although only at the local and regional level), reproducing a ***Success to the Successful*** archetype.

However, despite these triumphs, APE has encountered significant ***Limits to success***. One major barrier has been the legal and jurisdictional constraints tied to the Catalan government's lack of full control over energy policies, as energy competences are largely held by the Spanish state, where APE has not had any influence. This has hindered APE's ability to address systemic issues such as energy affordability and the unresolved issue of debt condonation for vulnerable households resulting from the implementation of Law 24/2015. Additionally, resistance from private energy companies has slowed the implementation of key provisions in Law 24/2015, particularly in relation to debt forgiveness.

Moreover, as some APE members entered institutionalized politics, compromises were inevitable. The organization had to navigate political constraints, corporate resistance, and legal limitations, especially given that energy policy is primarily under the Spanish government's jurisdiction. These compromises may restrict the scope of the changes APE can push for, even as it works from within the political system.

DYNAMICS AT NICHE LEVEL

Loop 1 - The **intertwined crises** that overlapped in Catalonia when APE was founded helped in **mainstreaming the energy justice narrative** across different social actors. The uptake of energy justice narratives by existing social justice movements and the pro-independence CSOs and political parties led to a fast victory of APE in granting **more legal energy rights** to vulnerable households, which reinforced the energy justice narrative among the general public and other institutional actors. This first victory reinforced subsequent victories of APE in mainstreaming the energy justice narrative, even institutionalising its narrative within formal political institutions at the local and regional levels.

Loop 2 - However, the **limited outreach of APE at Spanish level** and the also limited competencies of the regional and local governments on energy, **limited in turn the outreach of these successes at the Spanish level**, and limited also the impacts of the local and regional successes. This acknowledgement of their own limitations would reinforce the energy justice narrative among the public in Catalonia, which has led to greater efforts from APE to influence the Spanish level policies, legislation and public opinion.

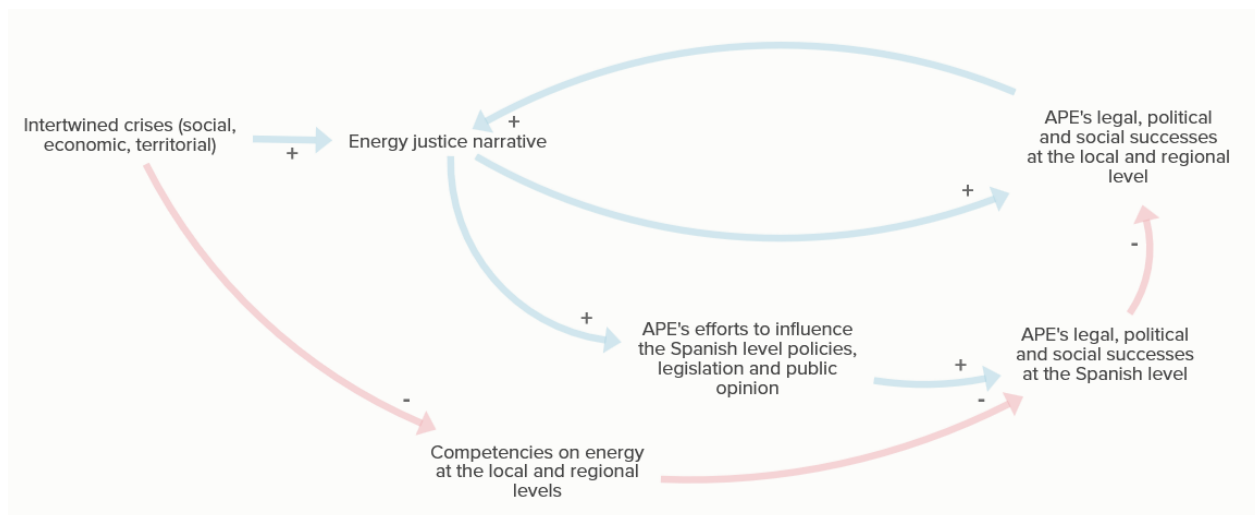


Figure 8.3.6: CLD Niche level dynamics

Loop 1 (Reinforcing): Energy justice narrative → + APE's legal, political and social successes at the local and regional level → + Energy justice narrative

Loop 2 (Balancing): Energy justice narrative → + APE's efforts to influence Spanish level policies, legislation and public opinion → + APE's legal, political and social successes at Spanish level → - APE's legal, political and social successes at the local and regional level → + Energy justice narrative

8.3.5 Summary and Conclusion

8.3.5.1 Origin & Evolution of HE

The 2008 crisis and austerity measures deepened energy poverty and social inequality, as governments prioritized economic recovery over social protections. In response, grassroots movements like 15M and PAH emerged from an already active social landscape, advocating for housing rights and economic justice while protesting austerity, corruption, and systemic failures. Out of this activist network, APE was founded in 2014 by members of existing movements like PAH.

The economic crisis also intensified the longstanding cultural and political desire for greater autonomy or independence in Catalonia. The crisis amplified Catalonia's push for independence, as many Catalans saw self-governance as a way to control economic resources and policy decisions. APE integrated its energy justice narrative into the independence debate, helping to mainstream the idea of energy as a fundamental right beyond the traditional circles of social rights and environmental grassroots movements.

To leverage overlapping social, economic, and territorial crises, APE built strong alliances across various movements, including social rights groups, environmental NGOs, and pro-independence organizations. This cross-collaboration among very different CAIs was pivotal in gathering signatures for the ILP campaign, which ultimately led to Law 24/2015 in 2015, protecting vulnerable consumers from energy cuts.

Political turmoil during that period, including the pro-independence process, might have influenced how the regional government positioned itself regarding social policies (window of opportunity), often using them to garner public support. Social policies, including energy poverty measures, became intertwined with political strategy, as pro-independence parties leveraged them to strengthen their base. The 2014

independence consultations triggered early elections in Catalonia, coinciding with APE's push for political backing on the ILP for housing and energy poverty. The pre-election climate may have pressured the Catalan Parliament to approve the ILP with broad support.

As the economic situation stabilized, and recognizing the regional limits of the law, APE shifted its focus to empowering vulnerable households and raising public awareness, while also beginning advocacy efforts at the national level. At the local level, APE transitioned from activism to larger institutional influence, shaping local energy poverty policies, especially after some members joined the *Barcelona En Comú* administration in the Barcelona City Council in 2015.

8.3.5.2 Organization & Activities of HE

APE was founded and primarily operates in Barcelona, where it has built a strong presence within the local social movement landscape.

At its foundation, APE's activities were primarily focused on advocacy, with a clear objective: passing a law to prevent energy cuts for vulnerable households and mitigate the social crisis caused by the 2008 economic downturn. This initial effort successfully led to the approval of legal protections against disconnections.

Following the law's passage, APE expanded its work to include periodic collective support sessions in various neighbourhoods, aiming to empower and educate vulnerable households about their energy rights. In addition, it has engaged in research on energy poverty from an intersectional perspective, collaborating with research institutions to deepen understanding of the issue.

APE has also been active in the media, using public campaigns to mainstream energy justice narratives and expose the power dynamics within the energy industry. It continues to raise awareness, focusing on Barcelona while also engaging at the regional level to keep energy justice on the public agenda.

More recently, APE has begun advocacy efforts at the national level in Spain, targeting Spanish policymakers. Leveraging temporary protections against energy cuts introduced during the COVID-19 pandemic, it is now pushing for more stable and comprehensive measures to safeguard vulnerable households across Spain.

Their current activities are mainly the collective advisory sessions, which they perform regularly in different neighbourhoods for any interested citizen wanting to increase their knowledge on energy rights and energy poverty protection schemes. Beyond these collective advisory sessions, APE also offers different spaces for engagement and collaboration:

Coordination meetings: Dialogue spaces where key decisions are made about the initiatives APE pursues daily, including the planning of campaigns, mobilizations, and actions.

Working groups: These are dedicated teams to organize and execute specific events or campaigns.

Educational sessions: Open capacity building actions focused on various topics related to water and energy, to increase the knowledge needed to combat energy poverty.

Mutual support circles: These are safe and trusting spaces within APE's network where people help each other navigate the emotional and practical challenges caused by the current energy system. They are also places to address additional vulnerabilities and inequalities, such as financial hardships, gender disparities, disabilities, age-related concerns, or health conditions.

By forging alliances with other social movements and CSOs in Catalonia, APE has been able to amplify its narrative and work collaboratively to advance shared goals related to energy poverty and social justice. These cross-sectoral alliances with other initiatives deeply rooted in the local level have been crucial for pursuing its goals.

Over time, APE has directly influenced policymaking, particularly in Barcelona, as some of its members and activists from PAH joined the local government in 2015 with the political party *Barcelona En Comú*. At the regional level, it has also played an indirect role in shaping policy through the inclusion of the energy justice narrative in the political discourse of the regional branch of the political party (*Catalunya En Comú*), further solidifying its impact on energy justice in Catalonia.

8.3.5.3 Goals & intended Outcomes of HE

APE fights for universal access to essential water and energy services, ensuring that no one is left without these basic needs due to economic hardship. To achieve this, APE pressures governments to uphold these rights and hold large energy and water corporations accountable for their role in perpetuating energy poverty.

One of their key battles has been to end energy supply cuts for vulnerable households, ensuring that no family is left without electricity or water simply because they cannot afford to pay. To achieve this, APE mobilizes communities to demand their right to energy and advocates for a stronger regulatory framework that protects those most at risk. In fact, just a year after APE's foundation in 2014, APE, in collaboration with PAH and other CSOs, secured the passage of Law 24/2015 on urgent measures to address the housing emergency and energy poverty, which enshrined protections for energy-vulnerable households in Catalonia in a period of a severe social crisis.

Since the law's passage, APE's role has been ensuring its enforcement by pushing public institutions and private companies to comply. In 2021, their efforts led to an agreement between Endesa and the Government of Catalonia, resulting in the cancellation of energy debt for thousands of families. APE continues working to push other companies to follow this example and ensure that everyone, regardless of their housing situation, has guaranteed access to basic utilities.

Beyond legal advocacy, APE also works to expose the power of big energy corporations, highlighting how their profit-driven interests often come at the expense of people's fundamental rights. APE also strives to mainstream the concept of energy justice, reinforcing the idea that access to energy and water is a human right and linking this struggle to broader social justice movements, such as the fight for housing rights.

Citizen empowerment is central to APE's mission as well. They equip people with essential knowledge about energy rights and the energy market, enabling them to make informed choices and navigate the complex energy system more effectively. Locally, APE pushes for concrete measures to ensure access to basic supply for vulnerable communities, striving to leave no one behind. In some cases, they have even succeeded in securing essential services for individuals living in irregular housing conditions.

Their specific goals and vision are based on the assumption that energy should be a right and not a privilege, and are presented in their texts as follows:

Universal access to water and energy, regardless of one's ability to pay.

End to indiscriminate disconnections: advocate for public authorities' extended role in protecting human rights, rather than leaving these critical decisions to profit-driven utility companies.

Corporate accountability: held energy companies accountable for the financial burden of ensuring access to basic services, considering that their large profits should not come at the cost of people's dignity.

In summary, APE's story is one of remarkable success in securing legal protections and raising awareness about energy justice, but also one of ongoing challenges. The organization has faced significant barriers in the form of jurisdictional constraints, corporate pushback, and gaps in the law's implementation, illustrating the complexities of enacting real, long-term change in the context of an incomplete and fragmented regulatory and political system.

8.3.5.4 *A multilevel perspective on the CAI using the MLP visualization*

What kind of transition has occurred from a multi-level perspective?

The transition in the case of the Alliance Against Energy Poverty (APE) is a "bottom-up, justice-driven transition", in which a grassroots movement (niche level), APE, challenged the dominant regime in the energy sector, influencing the regulatory framework with a law protecting vulnerable consumers from energy cuts and disconnections. Hence, APE led a transition from a regime focused on the energy market liberalization to a regime that recognizes energy poverty and enforces protections for vulnerable consumers.

This transition, started in 2014, has not yet fully changed the existing socio-technical system, but has introduced new governance mechanisms and legal guarantees, representing an ongoing process.

At the **landscape level**, the 2008 economic crisis in Spain was strictly linked to the real estate bubble, and austerity policies increased unemployment and financial hardship of citizens in paying mortgages and energy bills. This contributed to intensifying energy poverty.

At the **regime level**, before 2014, the legal framework did not recognize energy poverty as a systemic issue, although some attempts to protect consumers had been done. APE and other social movements and CSOs disrupted this regime, advocating for legal reforms and political recognition of energy poverty as a social injustice. Meanwhile, during the years of the crisis, the political landscape in Catalonia was undergoing significant changes and high political instability due to the rise of the pro-independence movement.

At the **niche level**, APE, founded in 2014, introduced innovation to the system by bringing the housing movement (PAH) and the energy justice activism together with the broader social ecosystem (notably other CSOs and pro-independence movements), to advocate improvements in the legal framework. Over time, its narrative transitioned from a radical grassroots movement to a more institutionalized actor, as some of its members joined the local government in Barcelona. This shift enabled APE to influence policies and measures, keeping energy poverty to the political agenda.

How has this transition occurred?

The transition was multi-dimensional and evolved through different mechanisms, including political advocacy, social mobilization, legal framework reforms, and cross-sectoral alliances between different stakeholders.

Economic crisis as a catalyst (landscape level influence): The 2008 economic crisis and the subsequent austerity measures created widespread discontent, pushing social movements to demand better housing

conditions. The subsequent real estate bubble and the increase of unemployment exacerbated the already existent but hidden energy poverty, triggering public awareness and civil mobilizations.

Grassroots mobilization & political advocacy (niche level influence): APE's grassroots activism on energy rights, together with the already existing social ecosystem (reinforced by the indignados Movement), challenged the energy corporate power that in Spain can be considered as an oligopoly and the institutional neglect of energy poverty. The actions done by APE such as occupying Endesa's offices in 2014, helped to expose the energy oligopoly's role in worsening energy poverty to public opinion. The network of collaborations among social movements with NGOs and CSOs lobbying, shaped a social space that had the aim to change the legal framework with the introduction of a law with protections and guarantees for vulnerable groups.

Legal & institutional change (regime level influence): the results of APE and the social ecosystem, within the window of opportunity of the overlapping of several crises (social, economic, and territorial crises), led to the implementation of the Law 24/2015 in Catalonia, a major policy breakthrough, avoiding energy supply cuts and introducing the Precautionary Principle. The movement's pressure also led to emergency partial debt condonation agreements between Endesa, the Barcelona City Council, and the Catalan Government for some vulnerable households for a certain period. However, the issue of debt accumulation, and in general energy affordability, is not structurally solved.

APE's role evolved from activism to a sort of institutionalization of its mission and values, significantly shaping local policies on energy poverty, particularly after some of its members joined the *Barcelona En Comú* and *Catalunya En Comú* political parties. This transition contributed to the incorporation of energy poverty and vulnerability, which considers health, social, economic and structural factors, into the Catalan policy framework, through the Law 24/2015 and the application of the precautionary principle. Additionally, it facilitated the consolidation of other energy poverty measures that at the moment were incipient, notably the Energy Advice Points in Barcelona, a public service that from 2015 onwards provides

legal assistance and guidance to households and citizens experiencing energy vulnerability.

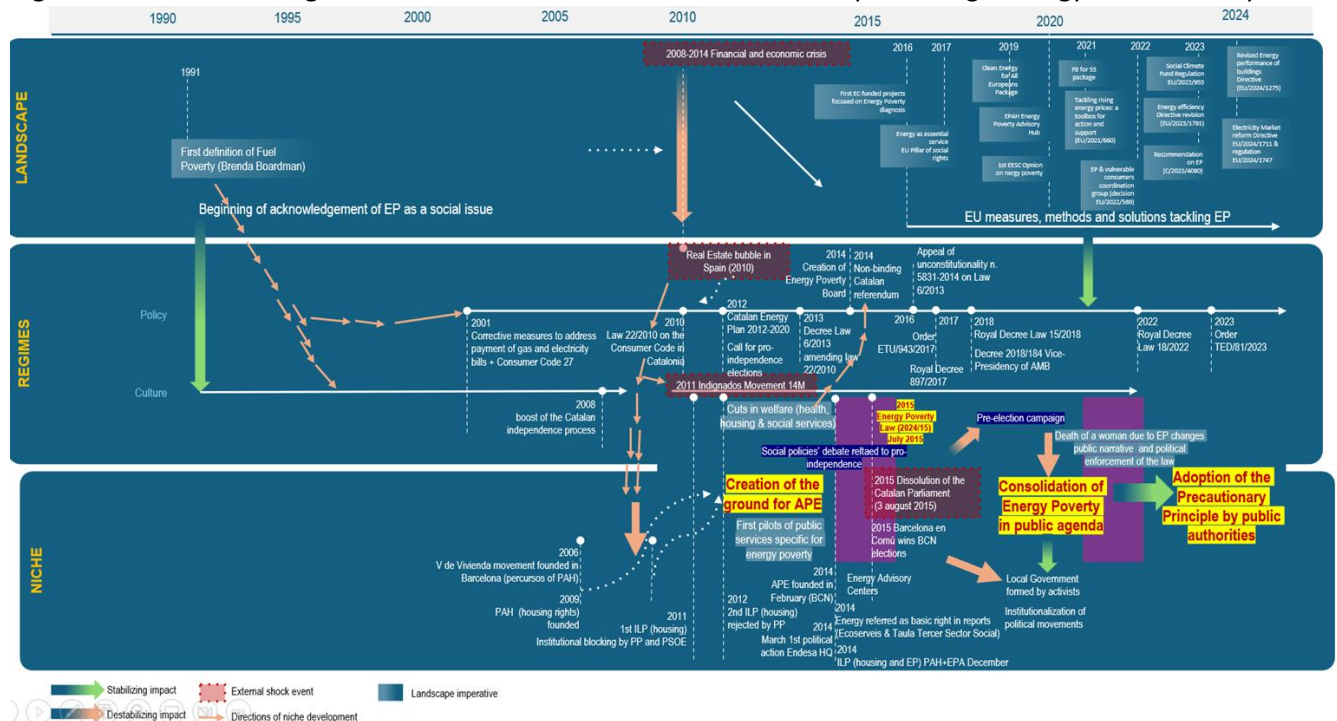


Figure 8.3.7: MLP visualization: A multilevel perspective on the CAI

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8.4 Pro Hanhikivi association (FI)

8.4.1 Interviews

8.4.1.1 Documentation of application of the method

Table 8.4.1 List of interviews and details

Interview code	Country	City/ Municipality	Date	Duration	Format	Function of the interviewee in the CAI
H1	FI	Kalajoki	22.4.2024	2 h	In person	Member of the association
H2	FI	Pyhäjoki	22.4.2024	1 h 26 min	In person	Member of the association

8.4.1.2 Results

Analysis theme 1: Description and objective of the CAI

The interviews began by discussing the establishment and objectives of the Pro Hanhikivi association. According to the interviewees, the initiative was started as a response to the decision to build a nuclear power plant (NPP) on the Hanhikivi peninsula in the municipality of Pyhäjoki. In 2007-2008 the opposition originated from concerns on the safety of nuclear power and how the area around the power plant will be affected. The main goal of the association was to defend the Hanhikivi peninsula and to maintain its environment in its natural state. A key motivation to act as an association was to make sure that the opposition to the NPP was unified and more official, and that no one had to act alone as a private individual. The goal was not the growing of membership numbers or arranging demonstrations, but to seek ways to influence the public opinion and thus political decision-making about the nuclear power plant. The initial goal of the CAI was to protect the environment of the Hanhikivi peninsula, but the second interviewee argued that over time it became clear for them that the entire Fennovoima project was not as well organized and thought through as it first seemed. Therefore, the goal for Pro Hanhikivi moved from only protecting the peninsula's nature to also opposing the whole nuclear power plant project.

The main goal of preserving the Hanhikivi peninsula remained for the duration of the association, but they also had other goals that changed during the years. One of the early objectives was to get the German company E.ON out of the Fennovoima initiative. The association sought to influence this by the association's VP travelling to Germany and taking part in E.ON's annual shareholder meeting, and giving a speech on E.ON's participation in the building of a new NPP in Finland. This took place after the Fukushima accident, when Germany had decided to phase out of nuclear power. Taking part in this meeting increased awareness among the shareholders on E.ON's involvement in the nuclear power plant project in Finland. Eventually, E.ON left the Fennovoima project in 2014.

Analysis theme 2: Relation to issue of sustainability and climate change

Sustainability and environmental themes played a key role in the CAI's work, as the main goal for them was to protect the environment of the Hanhikivi peninsula. They also promoted renewable energy as an alternative for nuclear power, sometimes collaborating with Greenpeace. However, climate change was not discussed that much, as the focus was on sustainability and energy policy. Both interviewees mentioned that climate change was not yet a big topic when the Fennovoima project took place, and therefore it wasn't a central topic in Pro Hanhikivi's work.

Nature and environment were discussed in relation to the uniqueness of the Hanhikivi peninsula and its natural value. Although the nuclear power plant was never built, the peninsula's nature was lost by the time the project lost political support in 2022. The interviewees expressed disappointment on the current state of the Hanhikivi peninsula and that the area's nature could not have been saved: "I will not go there again unless I have to" (H1, 2024). When asked of the achievements of the association, the second interviewee commented: "We have been congratulated that it went well, as the power plant wasn't built. But nothing in this went well. Well, some people have done well. I thought that they are possibly the entrepreneurs, the people who came here from somewhere else during the busier times to work, gained good income and left. But the local businesses have suffered. The people have suffered. The municipality would have suffered if wind power hadn't saved it. We have so much of this wind power now, that we get good income from it. The area was destroyed" (H2, 2024).

Analysis theme 3: Niche characteristics

"We were underdogs the whole time, but we didn't feel like a marginal group. We became a national influencer" (H1, 2024)

Pro Hanhikivi association can be located as a niche in the Fennovoima NPP process, as they were a grassroots initiative opposing national energy policy stakeholders and a multinational company. Instead of empowerment, the interviewees discussed how the experience of years long citizen participation work was instead quite discouraging due to the limited influence opportunities to the NPP project. However, they underlined how much they had learned during the years of working for the association and how they had developed their knowledge about the legislation and political processes connected to nuclear power. They discussed how demanding it had been and how difficult it was to combine the association work, job responsibilities, and family life and how stressful it was for many years: "But I don't know how to describe it. It is like putting your own life aside. So that you eat and sleep. Barely even sleep. Eat and do the necessities. For many, many years. All holidays, all days off. You use all your (time) for that (Pro Hanhikivi). I can't be without leaving a mark" (H2, 2024).

Although the work in the association was taxing in many ways, the interviewees discussed how the feeling of doing the right thing kept them determined: "...But there was this strong will to influence, that this is wrong, and that this needs to be stopped" (H 1, 2024).

Although the Hanhikivi peninsula was destroyed during the construction process, one of the interviewees discussed the postponement of the NPP project as Pro Hanhikivi's main achievement. The interviewee stated that: "If there wasn't Pro Hanhikivi, then who would have raised awareness on the critical sides of the (Fennovoima) project?...But who would have been the actor to raise awareness the special features of the (Hanhikivi) area, all of the environmental points of view and nature point of views that are there in the area?... Where would we be now if the project had kept its initial schedule?" (H1, 2024).

Pro Hanhikivi was initially a niche local actor, but over time they managed to break into the regime and national discourse through media visibility. According to the interviewees, the media reacted to them at first in a rather condescending way, mainly expecting emotional responses from them: "They tried to frame it as if here are the sensible matters and emotional matters and these people (Pro Hanhikivi) are now representing that emotional side" (H1, 2024). The interviewee continued that the association's solution was to completely focus on presenting facts in a professional way, thus underlining that their work is not an emotional response to the NPP project. They also requested that they could check all the

news stories written about them before publication, to make sure that the terminology used about the association was correct. This strategy was mostly successful, but according to the second interviewee, the media had a predisposition to emphasize the feelings instead of facts in the stories about Pro Hanhikivi. Over time however, the CAI managed to gain plenty of publicity through media and they were interviewed on national television as well. Later in 2015, the association gained even more visibility and influence, as the association's VP was elected as a Member of Parliament in 2015.

8.4.2 Textual Analysis

8.4.2.1 *Documentation of application of the method*

The data collected was mainly from news story outlets on the national level and local levels. This data included statements from Pro Hanhikivi and discussed the main events of the Fennovoima nuclear power plant (NPP) project. In addition, material from the initiative itself, such as blog posts from the association's president and the minutes from Pro Hanhikivi's annual meetings, were included. To gain insight from an academic perspective, studies regarding the Fennovoima NPP project and Pro Hanhikivi were included. The material covers the time span from 2007 to 2024. The Pro Hanhikivi Association was established in 2007 as a response to the municipality of Pyhäjoki being chosen as the site for the Fennovoima power plant. Although the association gave up in 2017, the president and vice president still gave out statements and interviews regarding the revived plans of building a NPP in Pyhäjoki.

Unlike the other two Finnish historical examples, there were no difficulties finding appropriate texts to be included for the analysis. On the contrary, the problem became identifying which texts were most essential to understanding how the CAI was pictured in the media compared to how their actions and aspirations were described in their own texts.

Unfortunately, not all the texts named in the corpus have been analysed yet. This report will therefore discuss the texts already read, which include all the news stories mentioned in the text corpus and the blog posts from Pro Hanhikivi leader between 2010 and 2013, which discuss the actions that the association has taken during that time frame.

Similar problem that occurred with the two other Finnish historical examples was that many potential articles were beyond a paywall. The majority of the Finnish newspapers have put their older articles beyond a paywall. Therefore, it is possible that some relevant articles were not included in this analysis. However, there was still plenty of material to go by.

In addition, the association no longer has a website. It could have been a helpful complement to interpret what kind of image work the association did.

As not all the texts in the corpus have been analysed yet, the next step is to complete the remaining analysis.

8.4.2.2 *Results*

Regarding the news stories included in the analysis, the president and vice president of the association are the ones giving statements, thus giving a unified message. This was mentioned as a conscious strategy in the interviews. The association wanted to maintain a unified image and narrative and thus only the two leading members, the president and vice presidents gave statements from the association. The casual members of the association were not visible in the news collected, featured in photographs or interviewed.

The rhetorics used especially by the vice president of the association are similar to politicians - such as presenting opinion as a fact, using figures of speech and justifying arguments by referring to authorities, institutions and legislation. They call out the nuclear power company Fennovoima for misconduct, mistakes, or vagueness in their permits and reports and question the safety of nuclear power. In addition, Pro Hanhikivi calls out individual politicians in the news stories. The news stories let the CAI make their own image with their statements and remain neutral in their descriptions of the organisation.

When the vice president of the Pro Hanhikivi association became a member of the parliament in 2015, she seemed to have used her status to gain more visibility for Pro Hanhikivi in the media. In news stories she called out ministers who oversaw the Fennovoima project. In summary, most of the statement-giving and thus image-making is done by the leading members of the association.

In the blog posts by the association's leader, the writing style is similar to opinion pieces rather than news story type statements. The association president discusses recent events and developments in the Fennovoima project and calls out Finnish MPs, discusses the benefits of renewable energy and questions why the Fennovoima project moves forward regardless of the many problems and challenges along the way. The blog posts are more personal and provide information on the practical level on what the association did to oppose the building of the nuclear power plant. The texts are negative towards Fennovoima and nuclear power in general.

Although the Pro Hanhikivi association was quite a small local association, they managed to gain surprisingly large visibility in the Finnish media, especially in the biggest news broadcaster Yle's website. When there were major developments or setbacks in the Fennovoima project, Pro Hanhikivi was often interviewed for a statement. Sometimes there were minor mistakes in the stories, such as describing the association as a "movement" instead of an association, therefore reducing the association's image from an official and organised entity to a less structured movement. In general, the association's goals - to protect the nature in Hanhikivi and to oppose nuclear power - are mentioned, and the association is taken quite seriously and not discussed as activists or demonstrators.

The statements by the association often addressed actors on the regime level. Fennovoima and the Ministry of Economic Affairs and Employment (MEAE) were often mentioned, and sometimes specific ministers were called out. These topics remained consistent over time in the texts selected for the analysis.

The blog posts give more insight on the personal motivations of the establishment of the CAI and are sharper in their criticism towards Fennovoima and how the project is handled by policymakers. Both in the news stories and the blog posts, the association is associated sometimes with other anti-nuclear organizations, such as Greenpeace.

8.4.3 Social Network Analysis

8.4.3.1 *Documentation of application of the method*

The stakeholders for the social network analysis were identified during WP1's preliminary phase. With social network analysis, the relations between the key stakeholders could be analyzed. The network of actors consisted of stakeholders from local, national and international levels.

8.4.3.2 *Results*

Influence and power in the network

In this historical example, the most powerful actors include the company Fennovoima, the Ministry of Employment and Economic Affairs, the Radiation and Nuclear Safety Authority STUK, the Parliament and Government of Finland, and the company Rosatom and its subsidiaries. All these stakeholders represent the regime level.

The Ministry of Employment and Economic Affairs and the Radiation and Nuclear Safety Authority STUK are national authorities regarding nuclear power in Finland and thus had power in the Fennovoima NPP project. Their power concerns regulations regarding the NPP building processes and whether they grant permission to build a new nuclear power plant in Finland. Their relationship with the CAI was neutral.

In terms of political decision-making, first the government issues the so-called Decision in Principle on the basis of the company's application. The task of the government is to decide whether a nuclear facility is in line with the overall good of the society. However, according to the Nuclear Energy Act, the Parliament has the final word, i.e., the government's Decision in Principle needs to be ratified. Parliament can either leave the decision in force or reject it.

The relationship between the CAI and the parliament and government was mainly neutral. After the VP or the Pro Hanhikivi Hanna Halmeenpää was elected as an MP, she aspired to influence the Fennovoima NPP project from within the parliament. The Pro Hanhikivi association was also disappointed that the Greens party at Pro Hanhikivi expected more support towards their actions from the Greens and were disappointed that the Greens did not leave the government sooner due to the Hanhikivi NPP project. The party resigned from the government in September 2014.

Fennovoima and Rosatom were the most powerful companies in this historical example. They had the resources to pursue the building of the nuclear power plant. Their relationship towards the Pro Hanhikivi association was conflictual, as Pro Hanhikivi opposed the building of the Fennovoima nuclear power plant and gave out public statements criticising the involvement of Rosatom in the NPP project.

8.4.4 System Mapping

8.4.4.1 *Documentation of application of the method*

To analyse this historical example from the perspective of system mapping, data was collected through interviews with key stakeholders and a literature analysis of news stories and previous research on this topic was conducted. In addition, the context and stakeholder analysis conducted earlier were useful for system mapping as well. These methods were complemented through forming causal loop diagrams of each historical example. Causal loop diagrams were formed based on the regime and niche levels of the historical example.

In order to form these diagrams, the historical example and its development were estimated from the perspective of Braun's archetypes of causal loop diagrams. For the historical example of Pro Hanhikivi, the most descriptive archetype to characterize both niche and regime levels was "limits to growth". In the niche level, the factor that limited the growth of the historical example was the lack of resources to influence decision-making in the national context. On the regime level, the limiting factor was the loss of political approval of the nuclear power plant.

Similarly to the Kainuu case, it was challenging to form graphs describing changes in behavior. To form more accurate graphs to describe behavior, additional quantifiable data should have been collected

earlier. Therefore, the graphs in this text describe the approval rate of nuclear power in Finland both nationally (regime) and in Pyhäjoki municipality (niche).

8.4.4.2 Results

Regime level

Regime level issue that led to niche development(s):

On the regime level, the main issues that led to the niche development included the national interest to increase electricity production in Finland. Nuclear energy has long been an important element of electricity production in Finland. Before the beginning of the Hanhikivi project, there were four nuclear power plant units in Finland: two in Loviisa (Southern Finland) and two in Olkiluoto (Southwestern Finland). In the late 1990s and early 2000s, when building a new NPP unit was considered, public support had slowly been developing more positively, recovering from the low points of the Chernobyl accident, which significantly decreased the public approval of nuclear energy.

The graph below describes the acceptance of nuclear power and consumption from nuclear energy sources in Finland over the past decades.

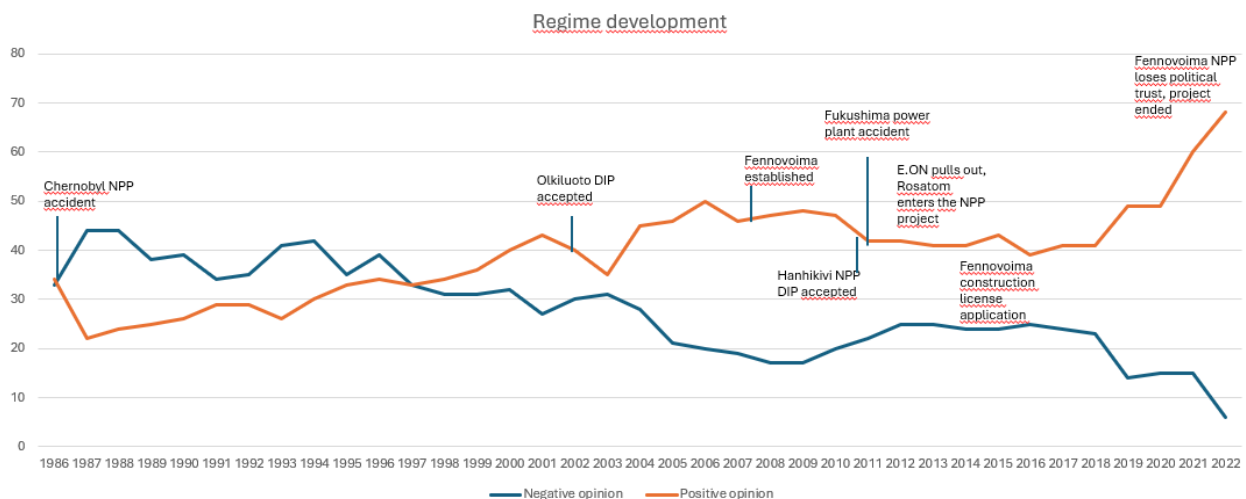


Figure 8.4.1 Acceptance of nuclear power in Finland (Source: <https://energia.fi/en/press-releases/popularity-of-nuclear-power-reaches-a-new-record-in-finland/>)

Finnish attitudes towards nuclear power have changed over the years. Energy companies submitted an application for a new NPP unit before the Chernobyl accident in April 1986. After the accident, attitudes became much more negative. The industry reapplied for a permit in the early 1990s. After a vote, Parliament rejected the application in 1993. The construction of the new NPP unit was put on hold for a few years, but in the late 1990s, energy-intensive industries started lobbying for more nuclear power. This also mobilised the anti-nuclear movement to campaign. The power company TVO submitted an application for the Olkiluoto 3 unit in 2000. The Parliament ratified the Government's positive decision in May 2002. In 2010, the government granted licences for two new NPP units. Of these projects, the Fennovoima nuclear power plant project in particular attracted a lot of publicity when the Russian company Rosatom became a partner in the project in 2013. Fennovoima terminated the NPP project in

June 2022 after Russia invaded Ukraine (Surwillo and Kojo 2024). Support for nuclear power among Finns reached an all-time high in the 2020s, as nuclear power was seen as a way to combat climate change. Even the delayed commissioning of the Olkiluoto 3 NPP project and the media attention given to the project's problems did not dampen support for nuclear power among Finns. In the early 2020s, small modular reactors also received increasing media attention (Kari et al., 2023). In Finland, the issue of nuclear waste disposal has been presented as resolved. A political decision in principle on the disposal of spent nuclear fuel was accepted in Finland in 2001. The government granted a construction license for the final disposal facility in 2015. The nuclear waste management company Posiva applied for a licence to operate the facility in December 2021.

Dynamics at regime level

In October 2007, the nuclear power company Fennovoima launched an EIA procedure for a new NPP in three municipalities: Pyhäjoki, Simo and Ruotsinpyhtää. In 2008, the company chose the same locations for the technical design. At the decision-in-principle stage in 2009, the company announced that it was rejecting the town of Ruotsinpyhtää and thus the alternative sites of the NPP were the municipalities of Pyhäjoki and Simo. In the site selection, the company referred, among other things, to local approval. According to Fennovoima, Pyhäjoki and Simo and the surrounding sub-regions strongly support the Fennovoima project and wanted a nuclear power plant in their area. In October 2011, Fennovoima announced that the NPP would be located in Hanhikivi in Pyhäjoki. The company stated that no single reason was decisive for the location, but Pyhäjoki proved to be the most suitable on the basis of an overall assessment. The Pyhäjoki Municipal Council had already given a positive opinion on the application for a decision in principle on 9 June 2009. The decision was taken by a vote of 16-5 in the municipal council. Parliament approved the Fennovoima NPP project in July 2010. After the Fukushima accident, the German energy company E.ON withdrew from the nuclear power plant project. The Russian state-owned company Rostom was chosen as its replacement. Rosatom's involvement sparked a political controversy. Fennovoima had to apply for a supplementary decision in principle because the original 2009 application had changed. As a result of the dispute, the Greens left the government in 2014. However, the dispute did not diminish local approval for the project in the municipality of Pyhäjoki.

Niche development: Local support for the building of the Hanhikivi NPP

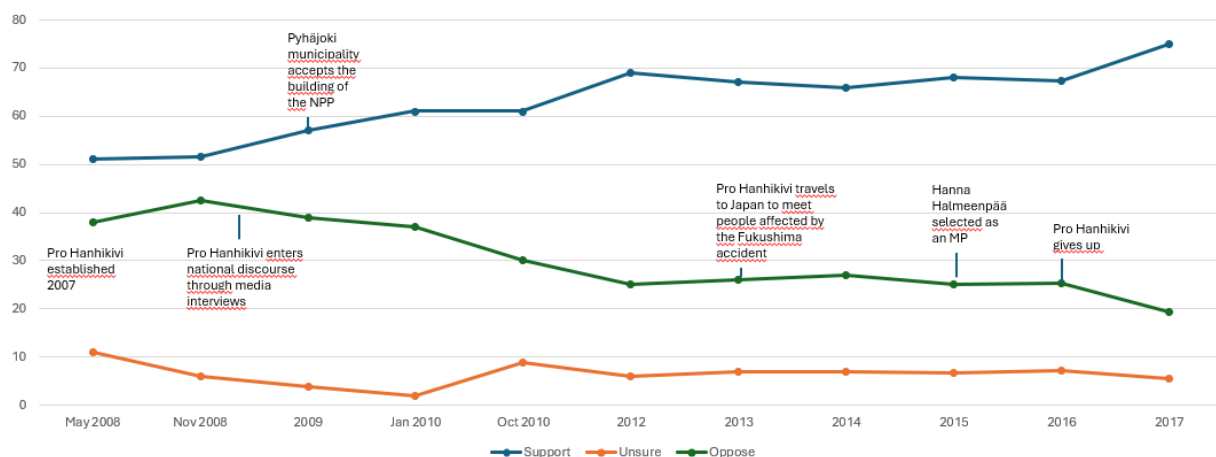


Figure 8.4.2 Survey by Fennovoima on the support of Pyhäjoki residents for the NPP (Source: <https://www.epressi.com/tiedotteet/energia/fennovoimas-local-support-took-a-giant-leap-in-pyhajoki-and-surrounding-municipalities.html?customer=1228> (07032025))

CLD of regime level dynamics

<https://embed.kumu.io/a458b23218ccafde4a18e2a5852a36b1>

B1: political approval → - building a new NPP → +political approval

R1: building a new NPP → + interest to increase domestic energy production → + building a new NPP

Limiting condition: Russia attacks Ukraine → - political approval

Niche level

- Initiative goal: To prevent the building of the Hanhikivi NPP to the Hanhikivi peninsula and oppose nuclear power in favor of nuclear energy
- Pattern(s) of key factor(s) at niche level: opposing the NPP through raising awareness via media and filing complaints in the NPP process

Chronological description of graphs of patterns over time:

Pro Hanhikivi was an anti-nuclear association established in 2007 in Pyhäjoki in order to oppose the building of the Fennovoima nuclear power plant and to preserve nature on the Hanhikivi peninsula. Pro Hanhikivi started as a small local association, but over time grew to 300 members by 2013. However, the most active members of the association were the vice chairperson of the organisation. The vice chairperson oversaw public appearances, such as interviews and giving statements for the media. Majority of the Pro Hanhikivi members, especially at the association's peak, were "passive members", providing their support mainly through small donations. Therefore, the association had very limited resources.

Pro Hanhikivi sought to influence the Fennovoima NPP project through reminders, hearings, complaints and (media) publicity instead of demonstrations. Public appearances through media and by filing written complaints regarding Fennovoima's actions were the main patterns of influence. As Fennovoima took official steps to advance the NPP process, Pro Hanhikivi would answer with comments to the media and filing complaints regarding Fennovoima, thus raising a voice of criticism and bringing awareness to inconsistencies in Fennovoima's actions.

The main turning points for the association included the Fukushima power plant accident in 2011, which opened a window of opportunity to discuss the dangers of nuclear power. Another turning point was Rosatom's subsidiary company entering the Fennovoima project as a result of the German company E.ON leaving the NPP project. There were inconsistencies in the company's connections to the Russian state, which gave further leverage for Pro Hanhikivi to voice their concern over the Fennovoima nuclear power plant.

The association first aspired to influence the NPP project through participating in municipal politics. They had candidates in municipal elections in Pyhäjoki. However, after a few years, the association stated that participating in municipal politics did not have enough influence on national projects, such as the Fennovoima NPP project. In addition, their VP was elected as a member of the Finnish parliament as a representative of the Greens party in 2015. This way, Pro Hanhikivi gained more political influence and

publicity. However, in 2016, the association decided to quit as the NPP project continued to move forward regardless of the association's hard work. The limited resources to continue the work were a major factor in this decision.

Dynamics at niche level

The archetype to describe this historical example was "limits to growth". Although the association gained plenty of publicity and raised awareness on issues regarding nuclear power and inconsistencies in Fennovoima's power plant process, the lack of resources was a key limiting factor to the association's opportunities to impact decision-making on the regime level.

As the decision-making regarding nuclear power plants is done mainly on the national level by institutions and politicians, citizens' opportunities to influence this process outside of voting in elections or demonstrating are limited. In addition, as mainly the president and vice president of the organization actively worked to promote the association's goals, the limited human, financial, and time resources negatively influenced the amount of actions the association could take. Therefore, the continuous work to oppose the NPP took a toll on the members of the association, in which the work happened at the expense of their spare time and well-being. This negatively affected their motivation and capacity to continue their efforts.

CLD of niche level dynamics

<https://embed.kumu.io/fc637ff89ddeb3a7bccb79bda7b537a8>

B: Limited resources → - motivation → - efforts to oppose the NPP → + motivation

R: Efforts to oppose the NPP → + visibility in national discourse → + efforts to oppose the NPP

8.4.5 Summary and Conclusion

8.4.5.1 Origin & Evolution of HE

The Pro Hanhikivi association was established with the purpose of protecting the environment on the Hanhikivi peninsula and to oppose the building of the Fennovoima nuclear power plant there.

Different phases can be distinguished in the evolution of the association. First, organisation of local activity/protest in the form of an association took place in 2007-2008 rather quickly after Fennovoima's announcement that the municipality of Pyhäjoki is one the alternative host communities of the new NPP unit in 2007. In the context of Finnish civic activity, the organisation of the civic activity into a registered association followed a very common / traditional pattern (see Siisiäinen 1990).

Second, the peaceful and non-violent style of the association is also in line with the traditional Finnish pattern of civic movement. The style was also demonstrated by the fact that the opponents of the NPP nominated candidates for the 2008 municipal elections in Pyhäjoki. Tulevaisuuden Puolesta – Pro Hanhikivi voters' association nominated 16 candidates altogether in the local elections. The voters' association won 4 seats out of 21 (18,8 percent of all votes in Pyhäjoki) (Yle kuntavaalit, 2008). However, in 2012, the association decided not to nominate candidates for the local elections. In an interview, the association's president stated that nuclear power issues could no longer be influenced by Pyhäjoki's municipal politics, but decisions were then in higher hands (Yle, 2012).

The association did not anticipate the changes in the NPP project. As the technology supplier for the nuclear power plant project changed in 2013, Fennovoima had to supplement its application for a decision in principle. As a result, the Pyhäjoki Municipal Council issued a new statement on the project in May 2014. The Municipal Council voted 18-3 in favour of Fennovoima's application to supplement the decision in principle.

Third, the association refrained from direct action or civil disobedience. Despite the desire of some organisations to cooperate with the association, it refused to do so to maintain its own style of operation, which was largely based on giving opinions in media and statements. For example, the climate action network Hyökyaalto organised a protest against the construction of a nuclear power plant in Pyhäjoki in October 2014 (Yle, 2014).

Fourth, one change in the association's activities is that its vice-president was elected as a Member of Parliament for the Greens in 2015. This brought further national publicity to the opposition to the Fennovoima project.

Fifth, the last phase was the dissolution of the association. The association's chairpersons announced in January 2016, after less than ten years of activity, that “there seem to be forces behind the Fennovoima nuclear power plant project that cannot be fought within the democratic decision-making system” (Yle, 2016).

8.4.5.2 *Organization & Activities of HE*

The association was well organised and led by the president and vice president of the association. They were in charge of the majority of the efforts. This way, the association ensured that their statements were unified.

8.4.5.3 *Goals & intended Outcomes of HE*

The goal of the association was to protect nature on the Hanhikivi peninsula, promote sustainable energy policy, and prevent the building of the Fennovoima nuclear power plant.

The association's activities decreased after 2016. At that time, the construction of the NPP site was underway in the Hanhikivi peninsula. Fennovoima submitted an application for a construction license to the MEAE in 2015. Due to shortcomings, the company had to complete its application. It did not receive a license from the government before May 2022, when Fennovoima terminated the engineering, procurement and construction contract with RAOS Project (a subsidiary of Rosatom) for the planned Hanhikivi 1 NPP unit. The company also withdrew its application for a construction license for the NPP unit.

The construction of the plant site harmed the Hanhikivi peninsula, although the NPP unit never received a license and was ultimately never built. The association, therefore, failed to achieve its main objective of preserving the natural values of the site.

The association's impact on the cancellation of the project was indirect. The association was undoubtedly a spokesperson for opposition to the nuclear power plant, even at the national level. However, several other factors contributed to the cancellation of the NPP unit in Pyhäjoki. The main one was the Russian invasion of Ukraine in 2022 and the resulting change in the geopolitical situation. The project lost political support and the company drew its own conclusions (Surwillo & Kojo, 2024). Construction was also significantly behind schedule.

8.4.5.4 A multilevel perspective on the CAI using the MLP visualization

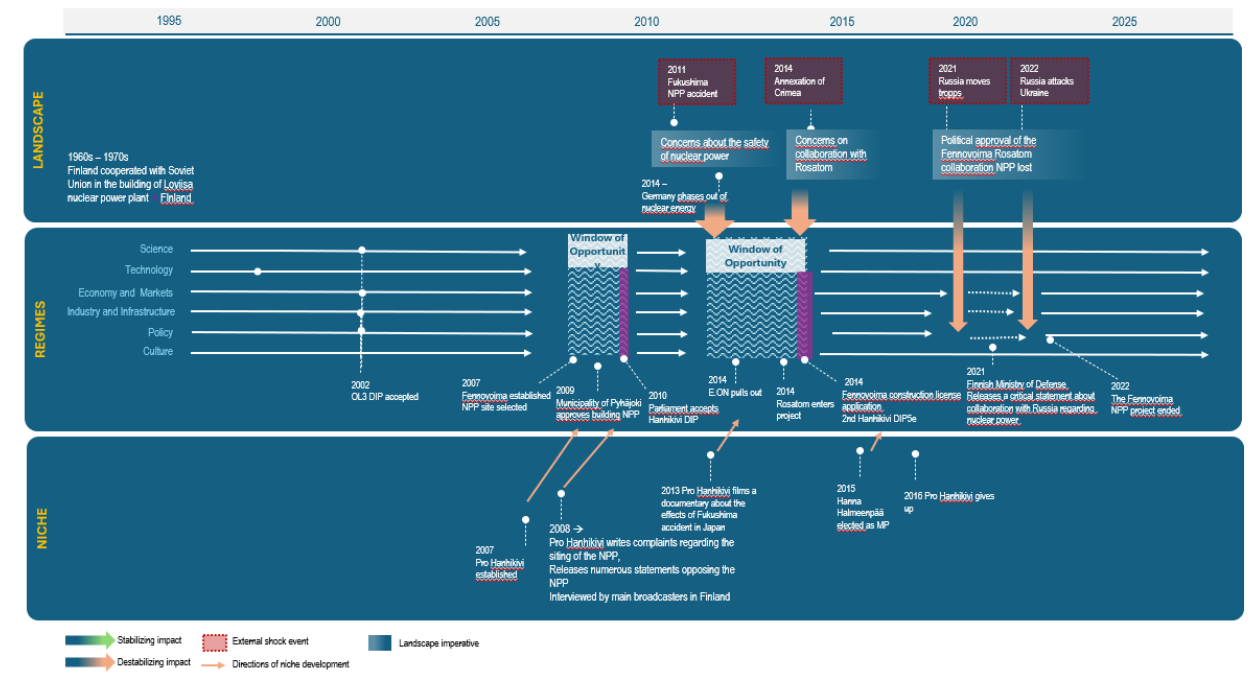


Figure 8.4.3 MLP visualization

Landscape

- Climate change became a bigger topic after the Kyoto convention. International efforts to curb the temperature rise.
- Paris climate agreement
- 2011 Fukushima NPP accident
- 2014 → Germany phases out of nuclear energy
- 2014 Annexation of Crimea
- 2020 Covid-19
- 2022 Russia attacks Ukraine → EU reduces dependency from Russian fossil fuels

Regime

- 1960s – 1970s Previous experience of building the Loviisa NPP in cooperation with Soviet Union technology (Vehkalahti 2016, 21-22)
- Late 1990s – early 2000s Anti-nuclear movement by environmental NGOs in Finland.
- Rise in climate awareness in Finland
- Olkiluoto 3 DIP accepted 2002, building of the NPP started in 2003 (Vehkalahti 2015, 90-91)
- small scale anti-nuclear movements in FI, such as Greenpeace (Lammi 2009) larger anti-nuclear movements in FI after the Chernobyl accident. During the 1990s, the parliament decided to build another NPP in Finland, with some anti-nuclear sentiments. In Finland, the anti-nuclear movements were mainly against nuclear weapons, and nuclear power on the side
 - o The anti-nuclear movements have their roots in the 1970s in the opposition of nuclear weapons, but since the 80s they have focused more on being against building new NPPs (Litmanen & Kojo 2011, 177)

- 2007 Fennovoima (nuclear power producer) established (Fennovoima 2024)
- 2007 negotiations regarding building a NPP started in 3 Finnish municipalities. Pyhäjoki was among the candidates (Syrjämäki, Litmanen & Kojo 2015, 30)
- 2009 Pyhäjoki municipal council votes yes for the NPP to be built in Hanhikivi area (Syrjämäki, Litmanen & Kojo 2015, 16)
- 2010 Finnish Parliament accepts Fennovoima decision in principle (DIP) (Syrjämäki et al 2015, 30)
- 2011 Hanhikivi area in Pyhäjoki chosen as the location for the NPP (Syrjämäki, Litmanen & Kojo 2015, 16)
- 2012 The German company E.On pulls out from the Hanhikivi project. The NPP accident in Fukushima contributed to the large-scale anti-nuclear sentiment in Germany and decision by E.On to pull out from the Hanhikivi NPP project (Syrjämäki et al 2015, 19)
- 2013 Rosatom enters the project (Syrjämäki et al 2015, 20)
- 2014 Fennovoima needs to apply for new construction license application due to partnership with Rosatom (Syrjämäki et al 2015, 24). The partnership with Rosatom raised concerns among political parties and ministries about potential Russian influence to Finnish energy markets (Syrjämäki et al 2015, 27 – 29)
- 2014 Fennovoima license accepted. As a result, the Green party leaves the government (Syrjämäki et al 2015, 30).
- 2014 Hyökyaalto protests
- 2015 Pro Hanhikivi VPP Hanna Halmeenpää elected as a member of Parliament
- Fennovoima construction license application
- 2022 Political support lost for the NPP
- 2022 Termination of the NPP project

Niche

- Pro Hanhikivi established in December 2007
- Hanna Halmeenpää takes part to the E.On annual meeting in Germany
- Pro Hanhikivi gives up

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8.5 Organisation Krakow Smog Alert (PL)

8.5.1 Interviews

8.5.1.1 Documentation of application of the method

Five relevant stakeholders have been interviewed between October 2024 and March 2025. Table 8.6.1 presents the details of their professional functions, organisations, regions, interview times and durations.

Table 8.6.1 Details on interviews

Nr	Interviewee (position, function)	Investigated CAI (organisation, country)	Date	Duration and format
1	Local journalist	krowoderska.pl ; Smoglab, Krakow, Poland	October 2024	2h – in-person
2	Spokesman for the Polish Smog Alert	Polish Smog Alert, Warsaw, Poland	March 2025	1h 40m – online
3	Activist at Krakow Smog Alert	Krakow Smog Alert, Krakow, Poland	March 2025	1h 30m – online
4	Co-founder of the Krakow Smog Alert	Krakow Smog Alert, Krakow, Poland	March 2025	1h 15m – in-person
5	Member of the Krakow Smog Alert (KSA) audit committee	Krakow Smog Alert, Krakow, Poland	March 2025	1h 10m – in-person

8.5.1.2 Results

The interviews provided key insights into the factors responsible for the emergence of the CAI, and the trajectory of its development, taking into account the dynamics of the relationship with social actors at the niche and regime levels, as well as the outcomes of the initiatives.

How and why did the initiative come about?

CAI was established in Krakow as a consequence of experience and deep opposition to the scale of air pollution in the city. Air quality had been very poor for decades, but the founders of Krakow Smog Alert (KSA) recall that smog was initially seen as a natural phenomenon occurring in winter. Although it was unpleasant, it was not widely associated with a significant health risk. It was only when one of the three founders of the KSA was working on a research report that he found air quality data. This specific information made him realise how serious the problem was and provided the impetus to take action. In 2012, Krakow was one of the most polluted large agglomerations in the European Union in terms of particulate matter - PM_{2.5}.

The initial strategy was to "drop the subject" and observe the reaction, but with the clear intention of offering people concrete solutions. Initially, the activities of the then-established grassroots initiative in a newly established niche focused on conducting information activities, among other things, by systematically publishing data on the smog problem on a social media profile. Once the activists started

talking about it, it became apparent that the people of Krakow identified with the demands, wanted to talk about them and had similar feelings. This led to the formation of community groups and the gaining of support from local media and companies.

The first goal was to get the public and politicians interested in the smog problem. Anti-smog marches were organised, and petitions were collected. Well-known artists and people associated with the creative industries supported the actions in the media. They also served as an advisory voice on how to run an information campaign, work with the media and build audience engagement. Thanks to the support of businesses in the creative and advertising industries, it was possible to organise a large outdoor public awareness campaign showing the scale of the problem at no cost.

The determination of the KSA founders to talk about the problem and try to solve it found fertile ground. According to one interviewee, it was a combination of various factors, including the growing environmental awareness of the public, who “added” clean air to the package of issues relevant to their health, which contributed to the resonance of the initiative. Local media, such as the “Gazeta Wyborcza”, played a significant role, dedicating whole pages to the smog problem and covering the demonstrations. Activists held regular press meetings with the media. They were keen to clarify any doubts and educate journalists on air quality issues, so that the information in the media was reliable and factual.

After a few years, the KSA's activities from the niche level have become an important factor in the transformation at the regime level. The KSA was prominently involved in the establishment of the nationwide Clean Air Programme, which led to the elimination of more than one million of the most air-polluting central heating boilers. At the legal level, the introduction and tightening of coal and pellet quality standards and a ban on the sale of classless boilers were achieved. Due to the KSA's activities, the anti-smog resolutions have been adopted in 14 out of 16 voivodeships in Poland.

Another important success has been the significant increase in public awareness of smog. The KSA has built a network of local initiatives and established cooperation with various actors, including businesses, scientists, lawyers and decision makers. International pressure – most notably articles in the foreign press describing the smog problem in Krakow and damaging the city's reputation as one of Poland's major tourist attractions, as well as the decision of the European Court of Justice that Poland had violated EU law on air quality standards – has been used to strengthen action at the national level. The same applies to court rulings, often issued in response to complaints filed by activists. An effective action model based on data, collaboration, and media pressure was developed, which could be adapted in different regions of Poland. As one interviewee points out, the introduction of these regulations resulted in a real decrease in air pollution across the country, which is a fundamental achievement of the movement.

What kind of transformation was attempted, and how has the focus of the initiative changed over time?

The initiative attempted to bring about a fundamental transformation in public awareness, public policy, and social behaviour in Poland. In 2012, a group of local activists decided to fight for clean air in Krakow. The initial goal was to draw attention to the local smog problem and convince the authorities to ban solid fuels as a heating source. Activities at the early stage were characterised by informal publicity of the problem, building awareness among residents and making the first contacts with the local government. The founders of the KSA started spreading information and talking to people. These activities at the niche level included informal discussions and attempts to make as many people as possible aware of the scale

of the problem. Growing public support began to materialise in the form of numerous and crowded demonstrations and performances, which were recognised by the authorities and the public.

A turning point was the involvement of the media, which began to highlight the smog problem, increasing public awareness. Local media played an important role in communicating the problem and reporting on the first activist activities. Equally important was the grassroots and selfless involvement of local creative and advertising companies in the problem. These companies provided billboards free of charge and developed a public awareness campaign, which significantly increased the visibility of the problem. This increased the pressure on local authorities, who could no longer ignore the problem. Thus, efforts were directed towards an anti-smog resolution for Krakow, making use of growing public pressure, health arguments and proposing concrete solutions drawn from existing air protection programmes in other countries. This culminated in the first anti-smog resolution for Krakow being voted through in 2013.

Following its success in Krakow, the KSA expanded its activities across the entire Malopolska region through a number of grassroots initiatives in individual towns and cities. KSA served these grassroots groups with expert support and accumulated know-how at this stage.

In 2015, the Polish Smog Alert (PSA) was formally established. The name change was due to the broadening of the scope of KSA activists' activities. This was because PSA sought to actively lobby for the adoption of similar anti-smog resolutions in other provinces and for the introduction of regulations at the national level, such as coal quality standards. Activities became more formal and more organised, gaining the support of lawyers specialising in environmental law. The Polish Smog Alert consistently maintained its financial independence from companies profiting from the transition, nurturing its image as an independent expert organisation. At the same time, a nationwide network emerged from local initiatives, strengthening activities at both levels. In the following years, the focus shifted towards the implementation and enforcement of adopted legislation, as well as the control of local government activities.

How does the initiative reflect its contribution from the point of view of sustainability / climate change?

The Sustainable Development Goals were not a direct or primary motivator of activist activities, although they did play a role in the context of clean air efforts. First of all, the KSA did not promote any specific technologies when it came to permitted heating sources. It focused on replacing the least efficient and most polluting heating sources, which had a positive impact on air quality and, incidentally, on CO₂ emissions as well. The situation is similar in the case of quality standards for coal or the ban on the marketing of the worst-quality solid fuels, which the KSA managed to pass thanks to its efforts. The promoted thermal modernisation of buildings combined with the replacement of stoves reduces energy consumption and, thus, greenhouse gas emissions, even when switching to fuels such as gas, which indirectly benefits the climate.

It can be said that, from the very beginning, there was an awareness of broader environmental risks, including climate change, among KSA's founders, who often had environmental backgrounds. However, in the strategy it developed, the KSA sought to focus primarily on the problem of smog and its direct health effects. This approach was intended to communicate more effectively with the public, for whom the smog problem was more tangible and more directly felt. It is much more difficult to argue for very specific changes or restrictions by appealing to risks that are less tangible or still abstract for many people. As one interviewee pointed out, it was easier to build public support around the smog problem than around

climate change, which ultimately contributed to achieving changes that also had beneficial effects on the climate

The impact on the fields of sustainability and climate change was more of a side effect, albeit an anticipated and welcome one, of the main battle for clean air. The initiative consciously focused on the smog problem because of its immediate visibility and health impacts, which proved to be an effective strategy for building public support and putting pressure on decision-makers.

What makes this CAI a niche The case of the Krakow Smog Alert is a model example of an initiative that initiated a niche and created an environment in which various activities and innovations focused on the air quality problem developed. Over time, the KSA became one of the most important actors working on air quality affecting changes at the regime level.

Initially, the initiative focused on a specific local problem: KSA was created in response to the strongly felt smog problem in Krakow. This narrow but pressing issue allowed the gathering of a group of people united by a common experience and goal. One of the activists interviewed emphasised that the smog problem was solvable and directly related to residents' quality of life, which distinguished it from more abstract climate issues, for example, and increased mobilisation and involvement. KSA's beginnings were relatively simple social media efforts, reporting on air quality and organising happenings.

This informal and grassroots nature may have provided some form of shielding from formal structures and potential resistance or politicisation of the topic at an early stage. KSA effectively used social media, especially Facebook, to inform, mobilise and engage residents. Participation in KSA activities built a sense of community among those affected by smog and gave them a sense of empowerment in their efforts to improve the situation. Interest in the topic resulted in a number of initiatives. Ordinary residents, artists, local businesses and universities became involved in the air quality issue. The anti-smog hackathons organised at that time were very popular, and some of the ideas generated then were turned into business ideas that still exist today. For example, the low-cost and widely available air quality sensors, created by students from AGH University of Krakow, became the product of Airly, a company later founded by the creators.

By taking a substantive approach and professionalising its activities, the KSA strengthened its position in discussions with policymakers and opponents, and its apolitical nature helped build broad support among residents of different political persuasions. This independence from partisan interests may have provided a shield against being pigeonholed and shunned by parts of society.

Due to its persistence in pursuing its goal and broad public support, KSA has influenced the shaping of environmental policy in Poland. It contributed to the introduction of anti-smog resolutions in most regions of Poland, universally binding fuel quality standards, and the establishment of many programs to reduce the carbon intensity of heat sources. The problem of smog has become an integral part of the discourse on environmental protection, and the solutions and legislative changes developed testify to the initiative's lasting influence on mainstream society. The legal framework in the European Union, which can be viewed in landscape terms, has also had some impact on accelerating regime-level efforts to eliminate sources of air pollution. Poland's poor air quality violated the adopted Directive 2008/50/EC on ambient air quality and cleaner air for Europe. As a result, in 2018, the European Court of Justice ruled that Poland violated EU law on air quality standards, and in the absence of corrective action, the European Commission may impose financial penalties on Poland.

In summary, the Krakow Smog Alert began as a grassroots initiative in a specific problem niche, using new communication tools and focusing on a specific local issue. Over time, through an effective strategy, building public support and media coverage, the smog problem ceased to be a niche and penetrated mainstream society, influencing environmental policy and citizen awareness. The initial characteristics of the niche may have acted as a shield against resistance, and empowered activists to push for change, not only through social pressure but also as active participants in the policy-making process through advice and collaboration with decision-makers at the local, regional and national levels.

8.5.2 Textual Analysis

8.5.2.1 Documentation of application of the method

The textual analysis was based on a corpus of 23 texts encompassing a wide range of sources, including newspaper articles, reports from non-governmental organisations, scientific papers, government documents, and legal analyses (see reference list). These texts were selected to capture the diversity of voices in the debate on anti-smog policies and the role of the KSA in shaping the narrative on air quality in Krakow and its wider implications, such as public health, environmental consequences and economic impacts. The selection process included both materials directly produced by the KSA and texts developed by external entities, allowing for a multidimensional understanding of the dynamics of this discussion.

8.5.2.2 Results

This textual analysis enabled to answer the research questions posed within the framework of the CO-SUSTAIN project in terms of manifest and latent forms of political participation.

The main conclusions from the textual corpus in terms of the meta-data

Analysis of the 23 texts in the corpus reveals clear patterns in shaping the debate on air quality and anti-smog policy in Krakow. This corpus covers a wide range of sources, indicating the growing importance and attention given to air quality issues. The most dominant voices in the discourse belong to niche actors: environmental activists, especially representatives of the KSA, who stress the need for stronger regulation and emphasise improvements in air quality. The aforementioned dominance mainly concerns the local media (both traditional and online), which became interested in the smog topic and the KSA's activities quite quickly. Over time, as the activities of the KSA moved into a phase of activities focused on lobbying for sustainable legal solutions to improve air quality, the analysed press articles began to point to the important role of institutions operating at the regime level. These include government and local authorities, with some actively supporting regulatory measures and others resisting them due to legal and economic concerns. These bodies are responsible for creating and implementing laws at national and local levels. The situation is similar for judicial bodies, which are presented as important actors in the light of the articles, given the significant role of judicial decisions in shaping the policy landscape. The media further influence the discourse by framing the issue according to their editorial stance, often presenting a highly supportive or, much less frequently, a critical perspective on environmental regulation.

Despite the prominence of these actors, certain voices remain underrepresented. Business and industry representatives, who might face economic challenges due to strict environmental policies, rarely appear in the analysed texts. Similarly, critics of anti-smog regulations, including those who argue that the measures are excessive or economically damaging, are less visible in the discourse, indicating that the narrative is largely shaped by pro-regulation perspectives.

The analysis also highlights a shift in the visibility and framing of air pollution policies over time. Initially, the discussion was centred around raising awareness of the severity of air pollution and the need for immediate intervention. However, as policy measures were introduced and legal challenges emerged, the focus shifted towards defending these regulations, addressing legal disputes, and refining enforcement mechanisms.

Furthermore, differences in thematic focus emerge between sources. KSA-generated texts primarily emphasise social mobilisation, activism, and success stories, aiming to inspire civic engagement. In contrast, news articles and external reports provide a more diverse perspective, ranging from legal and policy discussions to critiques of the economic implications of anti-smog regulations.

Main conclusions in terms of manifest content

Several patterns have emerged regarding manifest content over the textual analysis. First, the issue of air pollution has become a central issue over time, one of the city's priority problems. KSA's activities related to health concerns and the impact of air quality on the quality of life of residents have gone from being a niche issue to a central topic in Krakow's political and legal debates.

Regarding stakeholder analysis, the KSA is presented in media (newspapers, online news platforms) as a key actor advocating for change, acting as an intermediary between government bodies, courts and the public, namely between niche and regime levels. An analysis of the articles showed that the KSA has attracted the interest and approval of a diverse group of stakeholders. The effectiveness of the KSA's activities has been recognised by the media and researchers, resulting in articles presenting the history of the movement's development, based on interviews with KSA founders and research projects on social activism. What emerges from the above materials is a picture of the methods of action and conditions to which the media, researchers and the movement's founders themselves attribute a significant role in relation to the KSA's success. The network of links with other environmental and sustainability actors helped to gain the necessary momentum and reach, and their expertise allowed KSA to professionalise its activities and enter substantive discussions with key stakeholders. While some stakeholders such as city authorities, local and regional governments, scientists and medical doctors were quick to support the initiative, some stakeholders - mainly politicians and some business associations - opposed the changes proposed by the KSA, citing economic or political issues. According to media relations, the role of arbiter in these frictions was played by the courts, each time assessing the compatibility of the changes introduced with the broader legal framework in Poland.

Analysing the themes and narratives of the articles over time, it is noticeable that the earlier texts focused mainly on poor air quality and the initial resistance to policy changes. Over time, the discourse shifted towards air quality improvements, legal clashes, evidence-based advocacy and KSA's continued activism, emphasising their role in the pursuit of long-term solutions.

There has been a noticeable evolution in the thinking about the air quality problem, its causes, possible solutions and ways to act. Initial efforts focused on raising awareness of air pollution, public education and advocating for policy changes. Over time, these calls have evolved to focus on defending existing anti-smog measures, especially as legal challenges to such policies have become more apparent.

Finally, in terms of internal and external sources, texts produced by KSAs on their own portals tend to emphasise activism, public mobilisation and success stories, while external sources - such as news articles or policy reports - present a variety of facts, legal perspectives and policy challenges and focus on reporting

on the course of activists' efforts. This divergence in focus reflects the different objectives and framing methods used by KSA and external observers.

Main conclusions in terms of latent content

The findings from the textual corpus suggest a significant transformation in the role and perception of the KSA over time. Initially, the organisation was portrayed as a grassroots movement advocating for change from outside the political system. However, as its influence has grown, reflected in the number of press articles about KSA's activities, media releases and legislation implementing the movement's demands, a change can be seen in the way KSA is presented in both the daily and specialist press. From a grassroots movement, the KSA has begun to be presented in the media as an important organisation with a real influence on the shaping of Krakow's environmental policy, actively engaging with policymakers, legal institutions and the media. This shift illustrates the increasing professionalisation of civic environmental activism and transition from advocacy to active policy participation.

In terms of latent content, the analysis reveals evolving power dynamics. Early texts positioned the KSA as a movement reacting to an urgent crisis, emphasising public health threats and environmental disaster rhetoric. In later stages, the language shifted towards legal and policy-oriented discourse, reflecting a more structured and long-term approach to environmental governance. Earlier texts about KSA primarily used crisis-related terminology (e.g., “smog emergency,” “health threat”), emphasising the urgency of the situation. More recent texts, however, incorporate legal and technical language (e.g., “policy enforcement,” “legal challenges,” “EU regulations”), reflecting the shift from immediate emergency actions to long-term policy debates and implementation.

This change, reflected in the contexts in which KSA is described in later texts, suggests that the anti-smog movement has moved beyond emergency activism and is now integrated into the broader policy and legal framework. KSA appears in later press materials to be an expert organisation. It is often mentioned as participating in formal consultations and working (in an advisory role) on changes to air protection regulations. The media also asked KSA to comment on what was happening in the area of energy transition policies and programmes, including issues beyond air quality.

Additionally, competing narratives persist in analysed texts. While the dominant narrative, largely driven by the KSA and supportive government bodies, focuses on the benefits of environmental regulations, an alternative perspective—though less prominent—raises concerns about the economic consequences and potential regulatory overreach of anticipated anti-smog solutions. This tension highlights the broader challenge of balancing the need for clean air with economic and political feasibility.

Ultimately, the analysis of 23 texts underscores the evolution of air quality discussions in Krakow from a localised concern to a mainstream policy issue. The KSA has played a crucial role in this transformation, but the debate remains dynamic, with ongoing legal disputes and economic considerations shaping the future of anti-smog policies. While environmental advocates have successfully positioned air quality as a critical public health issue, the absence of strong counter-narratives from economic stakeholders suggests that further discussions on balancing environmental and economic priorities may still emerge in the future.

8.5.3 Social Network Analysis

8.5.3.1 Documentation of the application of the method

Initial data to reconstruct the social networks describing linkages between key stakeholders within the analysed CAI were first collected during the preparatory stage, based on a diverse set of information from available academic articles, media information and interviews with people associated with the KSA. The results of these analyses can be found in *Deliverable 1.2, Context and Stakeholder Analysis for Historical Examples of Political Participation*. In the next stage, the social network analysis was modified and supplemented with additional information gained from the text analysis and further interviews with stakeholders associated with the CAI.

8.5.3.2 Results

At a **niche level** (Fig. 8.5.1), a civic initiative focusing on the fight to improve air quality in Krakow began in 2012 when three people set up a social media profile called Krakow Smog Alert (KSA). Initially, the profile published daily information on air quality in the city. In the autumn of 2012, KSA used the social network for the first time to invite residents (SH21) to participate in a protest march. Around 300 people gathered to express their concerns about the city's air quality. A community spontaneously formed around the Facebook profile (SH34), which began to amplify public discontent and put pressure on the local authorities. Other organisations, public figures, activists as well as scientists joined in organising marches and publicising the air quality problem (SH4. Polish Green Network; SH21. Citizens supporting initiative; SH28. Influencers/Social media celebrities; SH33. Institute of Environmental Economics). Artists associated with Krakow (SH30) supported the initiative by organising happenings, creating the movement's visual identity or preparing banners and organising marches. They also played an important role in the professionalisation of the KSA's activities, providing substantive guidance on how to organise further protests, how to build messages and communicate with different stakeholder groups.

A year later, in December 2013, the association was formally registered under the name Krakow Smog Alert (SH1). The first marches attracted the attention of the local media (SH25) and gave the initiative even more publicity. The KSA started to organise press breakfasts in order to talk to the media about the problem in a substantive and unhurried manner, presenting further analyses and studies.

The Krakow-based creative agency Schutz Brand Friendly (SH29) offered its help in organising a public awareness campaign about the smog problem in Krakow. As a result, a large-scale social campaign was initiated in the media and through outdoor advertising, which was funded from the bottom up by the community. The preparation of the campaign was supported by companies active in the advertising industry. In the meantime, more stakeholders became interested in the smog problem, and grassroots initiatives such as the Coalition of Doctors and Scientists for Clean Air (SH27) or the Smogathon (SH19) evolved from which, for example, the startup Airly (SH18), offering air quality sensors, developed.

Activists have started lobbying for a change in the regulations on permitted energy sources (exclusion of solid fuels), as well as for the introduction of financial support programmes for the replacement of heating sources with cleaner alternatives and subsidies for the thermal modernisation of buildings. With the help of the legal foundation Frank Bold (SH20), the KSA backed up its demands with substantive proposals for specific legal and financial instruments. The KSA paved the way for all anti-smog resolutions in Poland. More than 50 other local smog alerts (SH2) were established. The members of such organisations are mainly residents of cities and towns where air pollution standards are exceeded, but also social organisations, urban movements, scientists, artists and some politicians. From a merger of local smog

alerts (Krakow, Lower Silesia and Podhale), the Polish Smog Alert (PSA) was formed in 2015. The actions of the KSA also caused opposition from some groups of residents (SH22) and Lesser Poland Guild of Stove Fitter and Related Professions (SH23), but due to the lack of tools and opportunities, these voices did not have much influence on the CAI.

Looking at the power of individual stakeholders, it is at the niche level that Krakow Smog Alert should certainly be identified. However, KSA built its power over a long period of time, mainly due to its highly substantive and evidence-based approach to the problem. Activists always based their arguments on robust data and expert opinions, which made it difficult to challenge their position. This ‘technocratic’ approach strengthened their credibility in the eyes of policymakers and the public. However, KSA’s position would not have become so strong if other actors had been involved. These include the organisations through which the KSA had access to legal and expert support, such as doctors and academics, the Frank Bolt Foundation and, last but not least, the local media. They played a huge role from the very beginning, publicising the case, supporting the initiative, and enabling it to build more and more coverage. In this sense, the power of the media was a driving force increasing the power of the KSA itself.

It is noteworthy that the real power of the KSA derived from the synergy of the combined efforts of many relatively low-powered stakeholders operating at the niche and working together towards a clearly defined goal, regarded by all as both a priority and a personal matter.

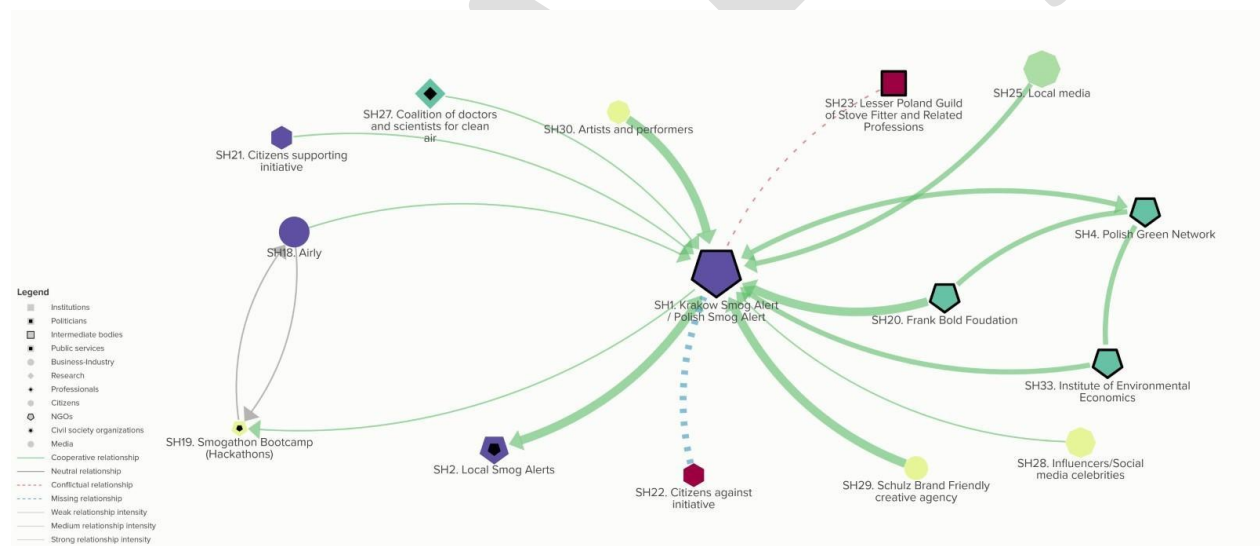


Figure 8.5.1: Network mapping of the Krakow Smog Alert initiative at a niche level, Poland

Analysing the network of stakeholders operating at the **regime level** (Fig. 8.5.2), it is clear that the most powerful actors are primarily those social actors with normative resources, such as the Supreme Administrative Court (SH11), which annulled the first anti-smog resolution of the Małopolskie Voivodeship Assembly (SH14) in 2013, arguing that the local government exceeded its competence by introducing it. The only option was to amend higher-level legislation, which required amendments to the Environmental Protection Act. The law was passed through the Sejm, but it depended on the President's (SH35) signature to be introduced. Despite coming from a political camp (the Law and Justice party, PIS) not particularly favourable to the bans contained in the local government resolution and strongly supporting the mining sector, the President of Poland signed the amendment to the Environmental Protection Act. This gave local governments (SH12. City Council of Cracow; SH13. Mayor of Krakow; SH14. Lesser Poland Regional

Assembly) the authority to ban coal boilers and certain fuels within the city. At a certain point, therefore, the success of the CAI depended on the decision of the President, who, notably, comes from Krakow, and this fact may have influenced the decision. The resolution was later challenged again by residents opposed to the regulations (SH22), but their arguments were rejected by the court.

Other highly influential figures include the Minister of Technology and Entrepreneurship (SH16), during the second term of the right-wing coalition government with the Law and Justice party as leader. The Minister was from Krakow and had a good understanding of the city's air pollution problem. As activists were unable to effectively address their demands to the relevant institutions, such as the Ministry of Environment (SH31) or the Ministry of Energy, they turned to the Minister for help. Her high level of power and proficiency in government succeeded in convincing PiS politicians at the local government level to vote in favour of an anti-smog resolution for the entire Małopolskie Voivodeship.

The Minister of Technology and Entrepreneurship was also instrumental in laying the groundwork for the introduction of quality standards for coal or standards for heating boilers. The Minister was able to push through these solutions despite the opposition of the then Minister of Energy (SH17), supported by the mining lobby (SH24. Polish Economic Chamber of Coal Dealers). Together with the Prime Minister's appointed Plenipotentiary for Clean Air (SH32), she was also involved in the creation of the nationwide smog-fighting programme 'Clean Air', subsequently implemented by the National Fund for Environmental Protection and Water Management (SH7). It is worth mentioning that, in part, the central administration's involvement with the smog problem occurred as a consequence of a confluence of several circumstances. At the beginning of 2017, massive smog persisted over Poland for several weeks. It affected not only the habitually most polluted cities like Krakow, but also the usually free of high concentrations of harmful substances in the air capital Warsaw. The smog problem was widely covered in the media. There were also articles in the foreign press (SH26), which resonated in news websites and social media around the world. This made it no longer possible to ignore the situation, and the United Right government (SH35) had to react.

The Jagiellonian University Medical College (SH9) and the AGH University of Krakow (SH10) were less influential actors but played an important role in building the argument for the need to combat smog, as universities in Krakow conducted research on the issue.

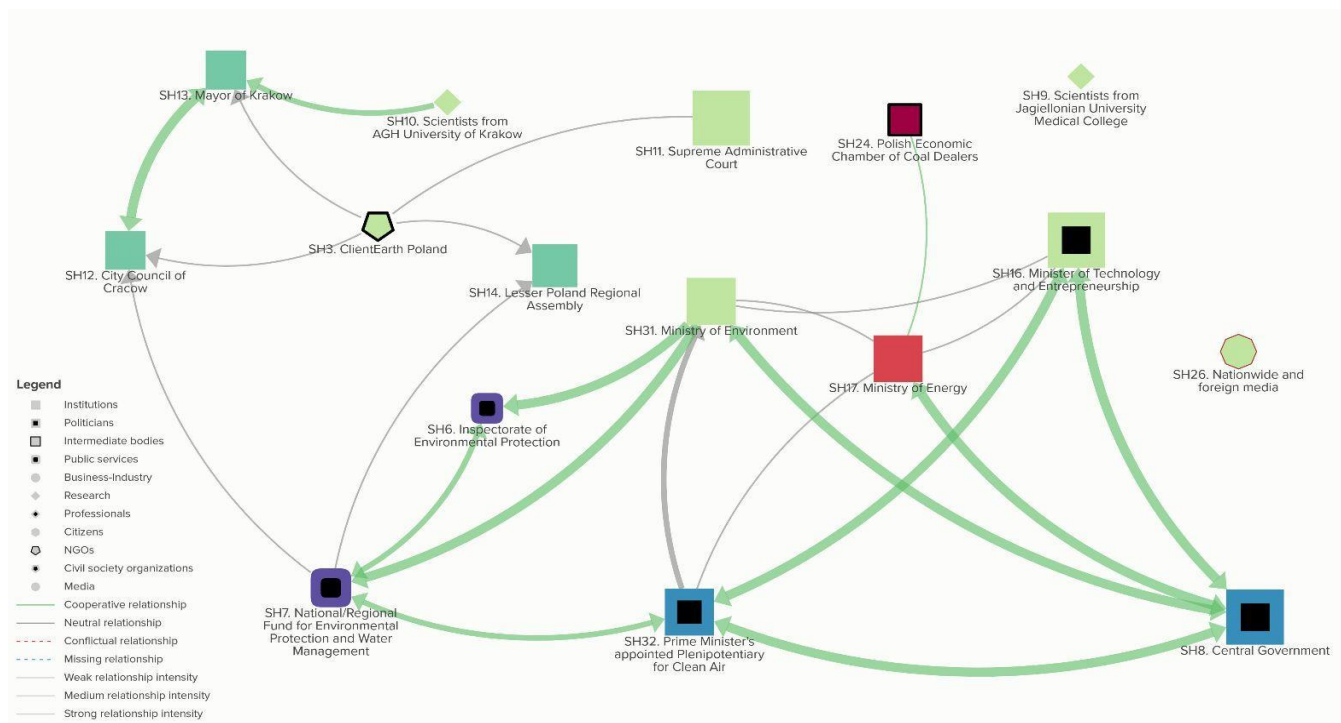


Figure 8.5.2: Network mapping of the Krakow Smog Alert initiative at a regime level, Poland

An interesting aspect concerns the relationship between the KSA, operating at **the niche**, and **the regime-level** stakeholders (Fig. 8.5.3). There is a clear and relatively obvious trend here, showing how KSA gradually built up its position to become a force difficult to ignore, penetrating the regime level from the niche. The synergy effect has already been mentioned here. This took place not only at the level of the niche itself. Relatively quickly, the activists fighting for clean air were joined by regime stakeholders, such as local authorities representing the regime (SH12. Kraków City Council; SH13. Mayor of the City of Krakow; SH14. Sejmik of Małopolskie Voivodeship). Thus a broad coalition for change was formed..

From a multi-year perspective, it can be observed that many breakthroughs, successes, and overcome impasses usually occurred precisely due to the KSA's ability to attract important regime actors to its side. This includes the aforementioned local government, but also actors representing the central authority. In 2015, the KSA, together with artists, organised a large-scale media campaign targeting the President of Poland (SH15). It was aimed at influencing and convincing the President to sign an amendment to a law that would make it possible to introduce an anti-smog resolution in Krakow. Shortly thereafter, when KSA struggled to establish a constructive dialogue with the Ministry of the Environment (SH31) or the Ministry of Energy (SH17), it was able to find support from the Minister of Technology and Pre-Enterprise (SH16), and Prime Minister's appointed Plenipotentiary for Clean Air (SH32), making air quality an important topic in the national public debate and one of the government's priority policies (SH8).

Media relations, ranging from independent and local (SH25) to national and international (SH26), played an important role in the process of implementing the KSA's demands. KSA's media relations strategy involved ensuring that activists and experts were always available to the media to present their position, explain legal and technical issues, and provide key data and expertise. KSA aimed to discuss smog from an expert perspective, which was made possible thanks to cooperation with professionals (SH27) and

employees of Krakow universities (SH9; SH10). As a result, the discourse that developed around the issue of smog was coherent and evidence-based.

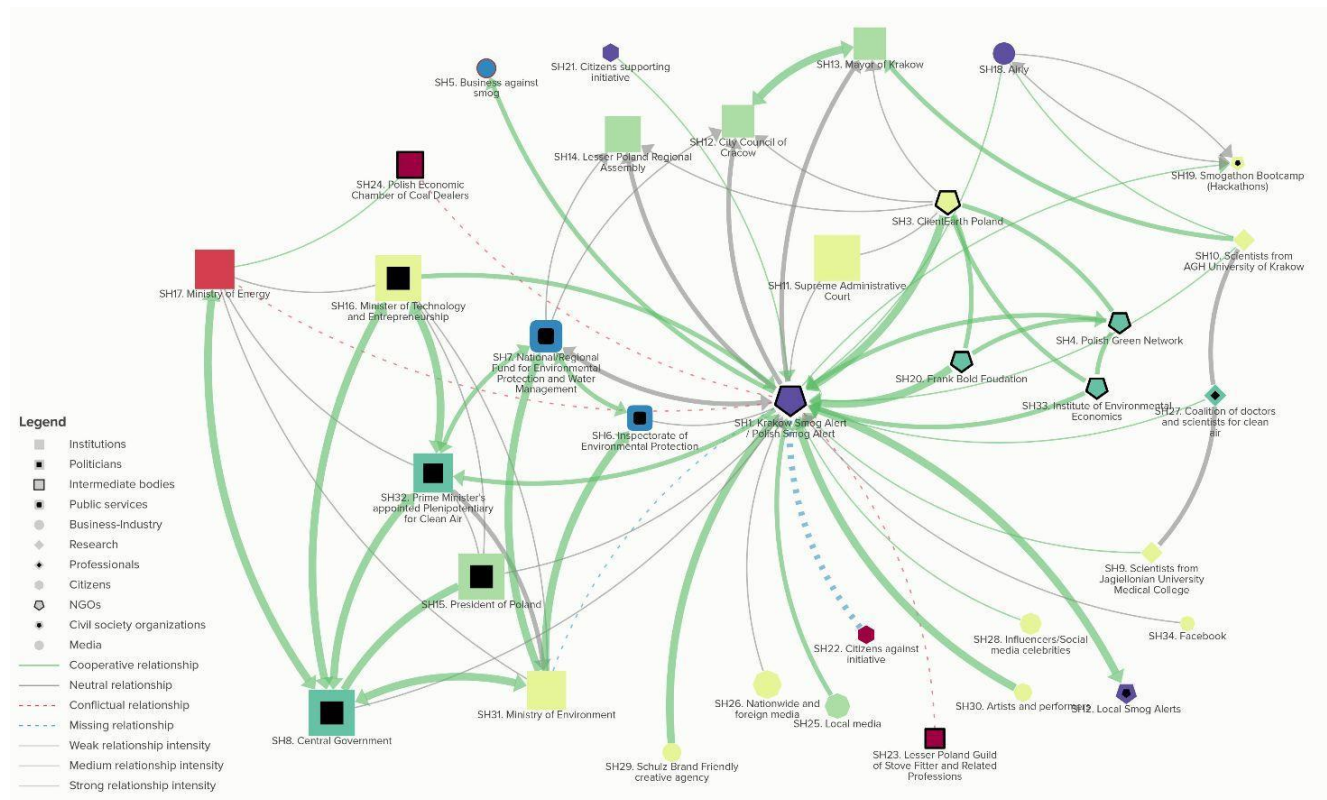


Figure 8.5.3. Network mapping of interactions between niche and regime actors, Poland

Finally, it is worth mentioning the antagonistic relations and the absence of interactions between certain stakeholders. This was certainly the case between those defending the status quo regarding the use of coal, including for heating. Activists from the KSA (SH1) saw the Ministry of Energy (SH17) as the main actor hindering the desired changes. The relationship was conflictual, although the conflict was not direct, but rather mediated by accusing each other and exchanging arguments through the media. Direct relations were very limited.

A similar pattern was observed between the Polish Economic Chamber of Coal Dealers (SH24) and the Lesser Poland Guild of Carpenters and Related Professions (SH23), where confrontations were more often indirect than direct. However, according to the information collected during the research, there was a lack of relationship between activists from the KSA (SH1) and the group of residents opposing the anti-smog regulations (SH22). Nevertheless, the CAI analysis does not indicate that this situation had a significant impact on the development of the niche or the effectiveness of the activists' activities.

8.5.4 System Mapping

8.5.4.1 Documentation of the application of the method

The Causal Loop Diagrams (CLDs) were developed based on data and information collected using the same research procedure, which includes the secondary analysis of texts, individual in-depth interviews and the information necessary to reconstruct and characterise the social networks associated with CAI. Particularly

useful was the information obtained from the analysis of literature and reports, which was then further detailed and placed in a broader context during the face-to-face interviews with stakeholders. This enabled the identification of key factors influencing processes at the niche and regime levels and made it possible to reconstruct the logic of linkages between elements.

In many cases, these patterns were based not on hard data but rather on the qualitative description presented by stakeholders during interviews or found in the texts analysed. This was due to the lack of availability of precise, quantified data relating to certain factors and patterns over time, especially those relating to attitudes and social practices at the niche level.

The result of the above analytical work was the creation of diagrams visualising the causal links and relationship dynamics between key factors in the complex system at the niche level, the regime level and between these levels. The landscape level was not included within the regime boundaries.

8.5.4.2 Results

The following section presents the key patterns and interrelationships of factors relevant to the emergence and development of KSA as one example of activism that led to real social change and regime transformation. The data is presented separately for regime-level and niche-level factors. The combined CLDs from both levels are also included at the very end of the chapter.

Regime level

The problem of smog in Krakow has been known for decades. The city tried to take measures to reduce the problem, but these were far from sufficient. This was primarily due to a lack of awareness of the scale of the problem and of the dangers it posed. The lack of decisive action was also associated with the strong mining lobby in Poland. Coal and lignite are the main sources of energy in the country's energy mix, and solid fuel boilers were, and still are, the most popular and cheapest source of heating.

Political will and concrete action emerged only as a result of protests organised by the Krakow Smog Alert starting in December 2012. It is as a result of intensive lobbying and educational activities by KSA activists that the attitude of local government representatives to air protection problems and the demands of local communities has also changed. According to the KSA activists themselves, during several years of fighting for clean air, politicians underwent a huge transformation in their thinking about smog and decided, despite the political risk, to make such difficult decisions at a fast pace.

Achieving these changes required, in addition to marches and protests, the support of scientists, the writing and submission of petitions, visits to Warsaw (Poland's capital city) for meetings with central government officials, and many campaigns that often involved public figures.

The most recent result of the KSA's activities was the adoption by the Małopolskie Voivodeship Assembly of an anti-smog resolution, according to which the use of classless solid fuel boilers was banned throughout the Małopolskie Voivodeship. Originally, the resolution was to enter into force at the beginning of 2023, but due to the energy crisis caused by Russia's attack on Ukraine, the Sejmik finally postponed the deadline to April 2024. This decision was appealed to the provincial governor, and activists from the KSA were also joined by the city of Krakow as allies fighting for air quality.

A number of incentives were introduced for replacing solid fuel boilers in the form of subsidies (Fig. 8.5.4 Pattern 1). Initially, the subsidy covered 100% of the costs incurred, but year by year, it decreased to 80%

and then 60%. Residents who replaced their heating system with an environmentally friendly one were able to obtain a subsidy of up to 100% of the difference in heating costs under the Local Protection Programme. However, this programme was only aimed at the poorest households. In subsequent years, additional programmes and financial incentives were introduced, resulting in greater motivation for residents of Krakow and the region to invest in cleaner energy sources.

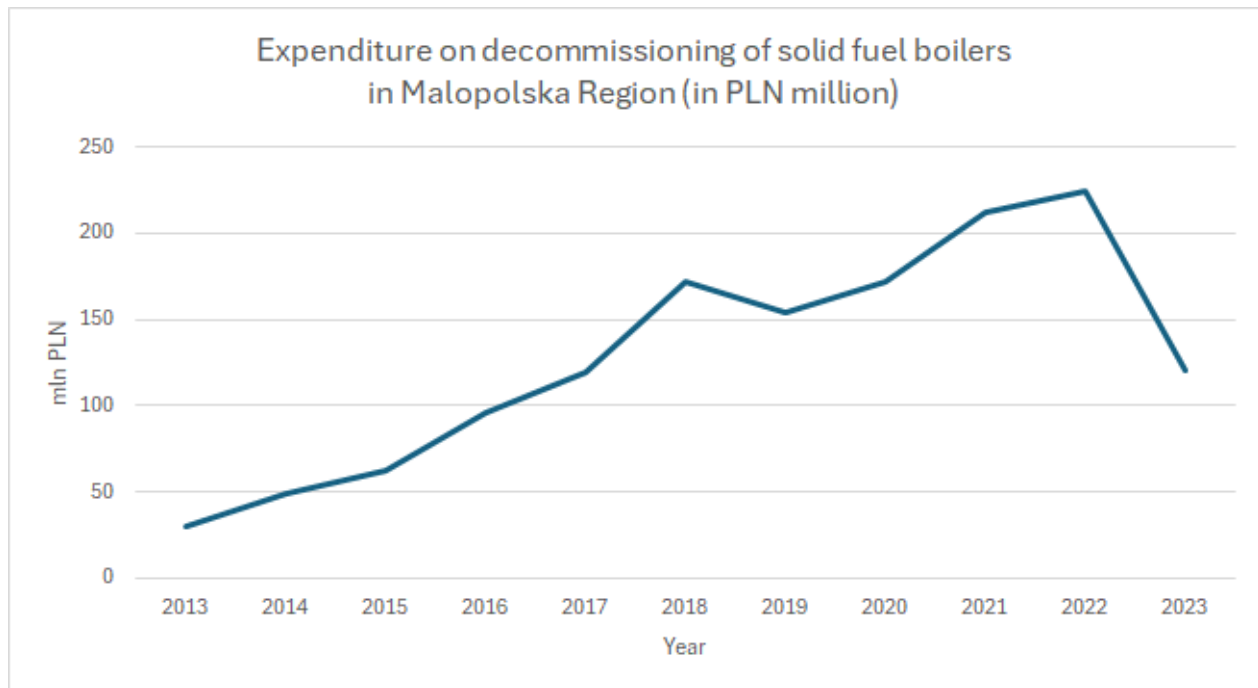


Figure 8.5.4: Pattern 1 Expenditure on decommissioning of solid fuel boilers in Malopolska Region (in PLN million)

Source: Own elaboration based on the reports summarising the implementation of the Air Protection Programme for the Małopolskie Voivodeship for the years 2013–2023 (Powietrze Małopolska, 2023).

The amount of subsidy for replacing boilers (initially covering 100% of the cost) had an impact on the number of applications submitted and, consequently, the number of heating systems replaced in the city. Over time, the level of subsidy was reduced and, consequently, the number of applications submitted decreased, as shown in Figure 8.5.5 Pattern 2.

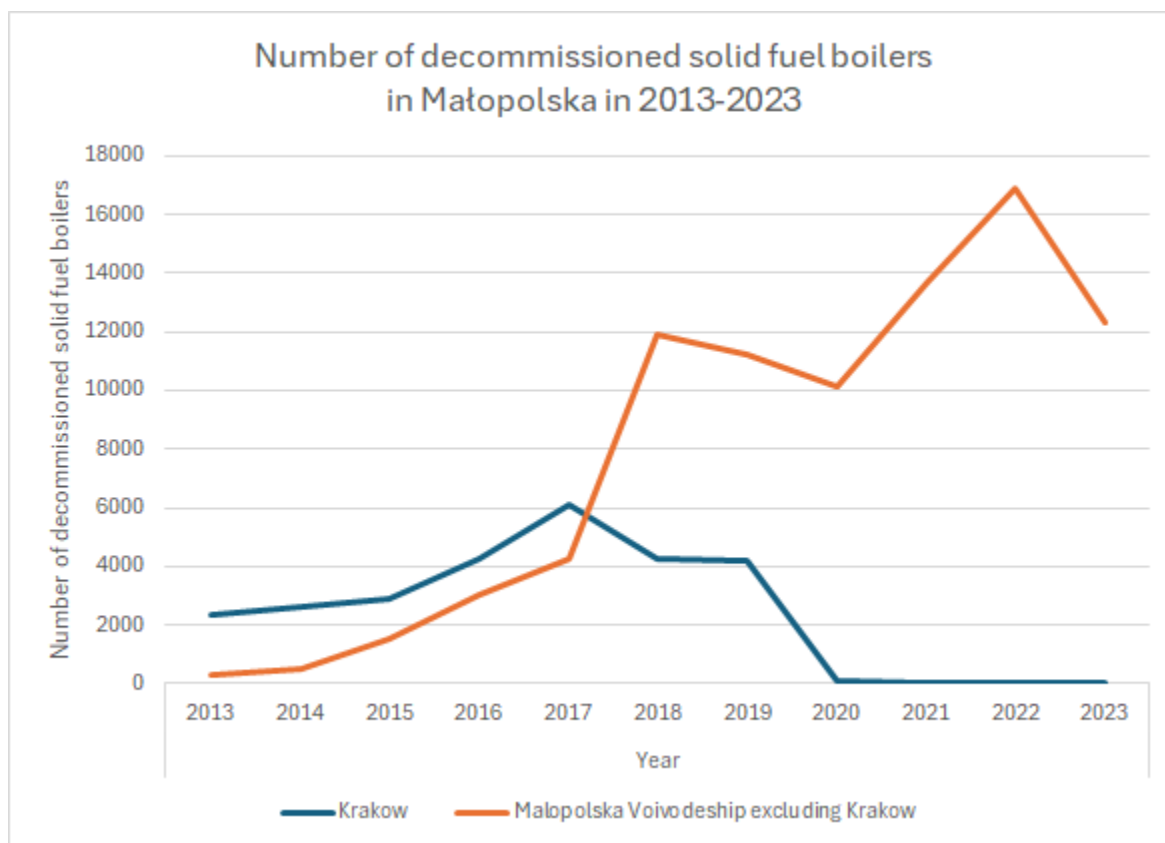


Figure 8.5.5: Pattern 2 Motivation to replace heating sources

Source: Own elaboration based on (Powietrze Małopolska, 2024).

In addition, the price of alternative heating sources (mainly electricity and gas) began to rise, further slowing down the replacement of solid fuel heating systems. Those who had replaced their old boilers suffered financially, which had a discouraging effect on further potential beneficiaries of boiler replacement programmes. This trend has affected the region more than the city itself, as regardless of energy prices and support mechanisms, a total ban on solid fuels in Krakow came into force in September 2019.

The long-term efforts of KSA members, activists, residents and local authorities have led to the introduction of a ban on burning coal and wood and the decommissioning of around 30,000 wood- and coal-fired boilers, resulting in a significant improvement in air quality in Krakow. The year 2023 was the first year in the history of measurements in which there were no annual exceedances of the level of particulate matter or the permitted number of smog days at any of the measurement stations in Krakow (Fig. 8.5.6 Pattern 3).

Number of smog days

24-hour average PM₁₀ concentrations exceeding 50µg/m³

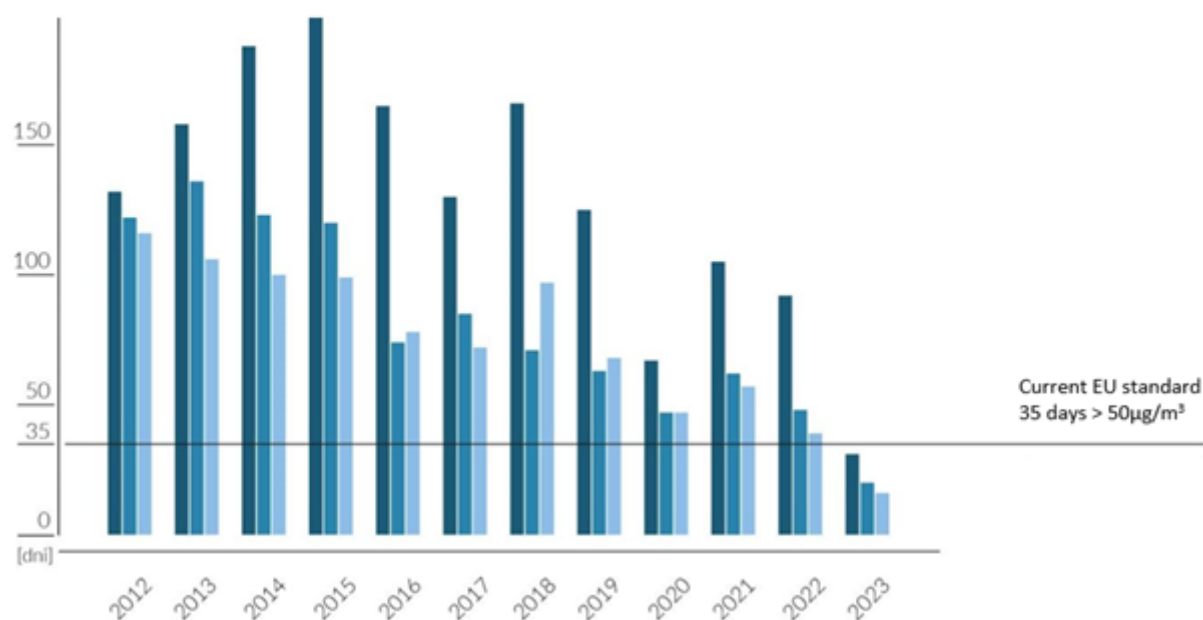


Figure 8.5.6: Pattern 3 Number of smog days in Krakow

Source: Krakow Smog Alert (2024).

Dynamics at the regime level

Summarising the above findings, the specific dynamics of the processes at the regime level can be identified. Increasing access to information and knowledge about air pollution levels and the harmful health effects of smog exposure had an impact on greater awareness and mobilisation of residents of Krakow and, later, other Polish cities. Prolonged periods in which Krakow was among the most polluted cities in the world increased pressure on both local and central governments to solve the problem.

Systematic lobbying by community organisations (including the KSA) and pressure that was particularly strong during periods of high air pollution levels led to a number of programs and regulations at the local and then national levels. These include subsidies for the replacement of heating sources, heating cost allowances for the poorest households to compensate for increased costs following boiler replacement, and gradually introduced bans on the use of the lowest quality energy carriers and inefficient furnaces. These incentives have had a significant impact on the dynamics of replacing the most problematic heating sources.

A significant decline in support and interest in investment at the household level came with the 2021 energy crisis, further exacerbated by Russia's invasion of Ukraine. By that time, however, the regime had already undergone a transformation because of regulations banning the use of solid fuels in Krakow (2019), restrictions on the use of inefficient heating sources throughout the region (scheduled for 2024), or restrictive nationwide requirements on the quality of fuels and energy carriers came into force.

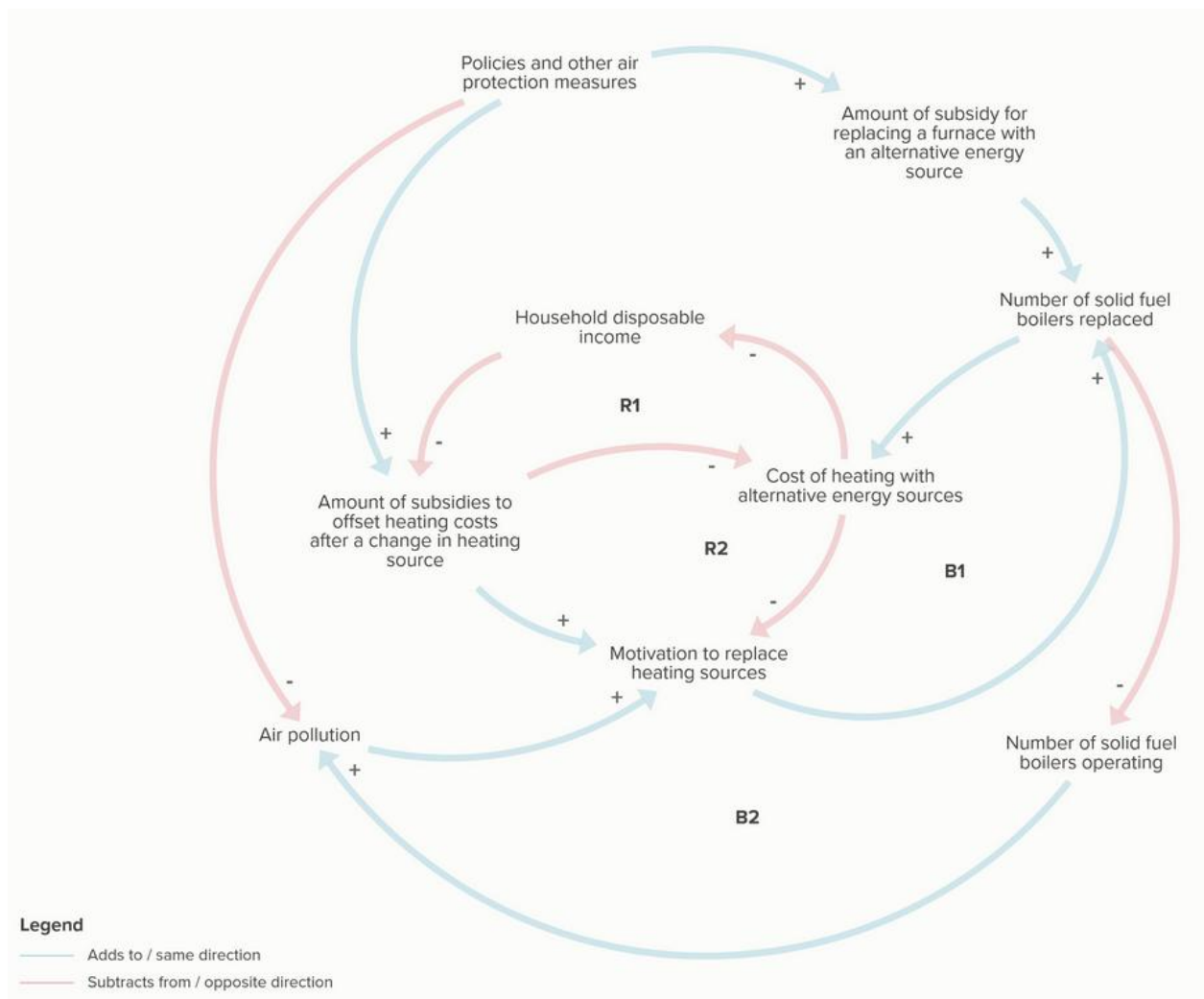


Figure 8.5.7 CLP: Dynamics at the regime level

LOOPS:

R1: Household disposable income -> - Amount of subsidies to offset heating costs after a change in heating source -> - Cost of heating with alternative energy sources -> -

R2: Household disposable income -> - Amount of subsidies to offset heating costs after a change in heating source -> + Motivation to replace heating sources -> + Number of solid fuel boilers replaced -> + Cost of heating with alternative energy sources -> -

B1: Motivation to replace heating sources -> Number of solid fuel boilers replaced -> + Cost of heating with alternative energy sources -> -

B2: Air pollution -> + Motivation to replace heating sources -> Number of solid fuel boilers replaced -> - Number of solid fuel boilers operating -> +

Niche

The factors that shape the image of the niche primarily reflect the dynamics of processes related to the emerging awareness of Krakow's inhabitants regarding the dangers posed by high air pollution. This awareness resulted in increased support for KSA activists and their demands, as well as greater pressure on politicians to introduce remedial measures.

The Krakow Smog Alert was thus created as a response to the alarmingly high levels of air pollution in Krakow and aimed at building public awareness of the problem and implementing effective policies and instruments to improve air quality – initially in Krakow and then throughout Poland. It started with a Facebook profile. The more days on which air quality standards were exceeded, the more information and warnings appeared on the profile. The increasing amount of available data, scientific reports on air pollution in Krakow, KSA's activist activities and the interest in the topic from local, national, and international media raise residents' awareness of the scale of pollution and its impact on their health.

More and more people were informed about the problem, which increased public awareness. This is shown, among other things, by data from the regularly conducted 'Krakow Barometer' survey, in which residents were asked to assess the city's air quality (Fig 8.5.8. Pattern 1a).

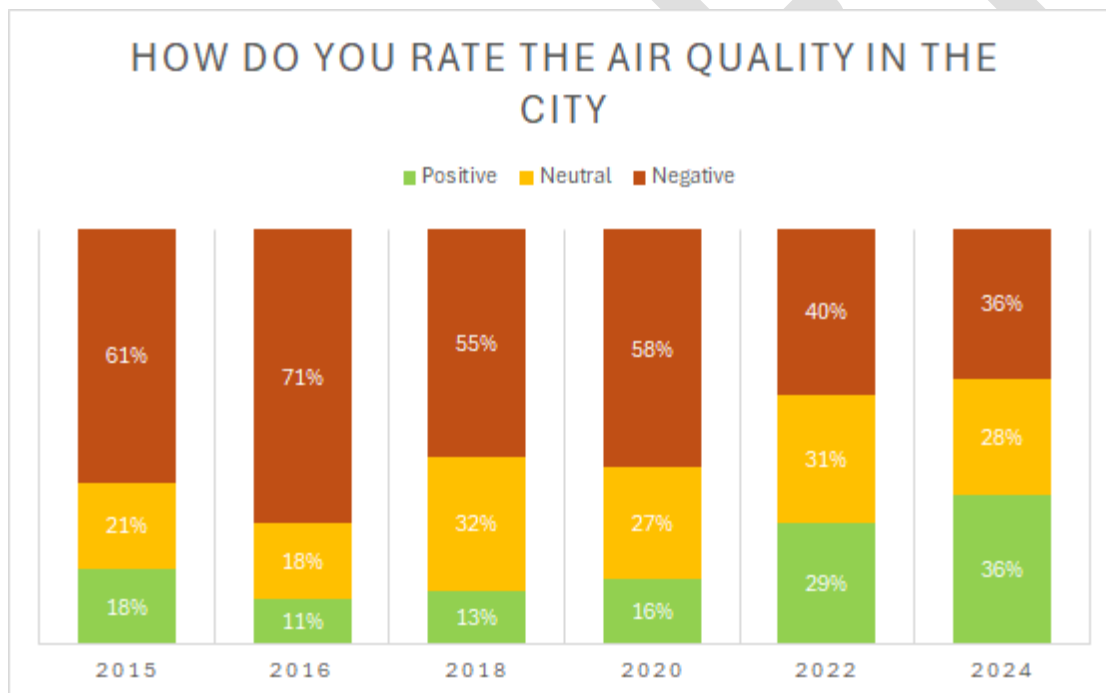


Figure 8.5.8. Pattern 1a Social awareness of air pollution and public expectations regarding the city's air protection policy

Source: Own estimation based on: Krakow Barometer Survey reports from 2015, 2016, 2018, 2020, 2022, and 2024 (Krakow City, 2025)

This had an impact on the mobilisation of Krakow's residents to actively express their dissatisfaction, including more frequent and numerous protest marches. Increased availability of information and numerous protests contributed to increasing media coverage of the smog problem in Krakow (Fig. 8.5.9.

Pattern 2a), but also encouraged more groups, such as community organisations, companies, public figures etc., to join in and take action for clean air.

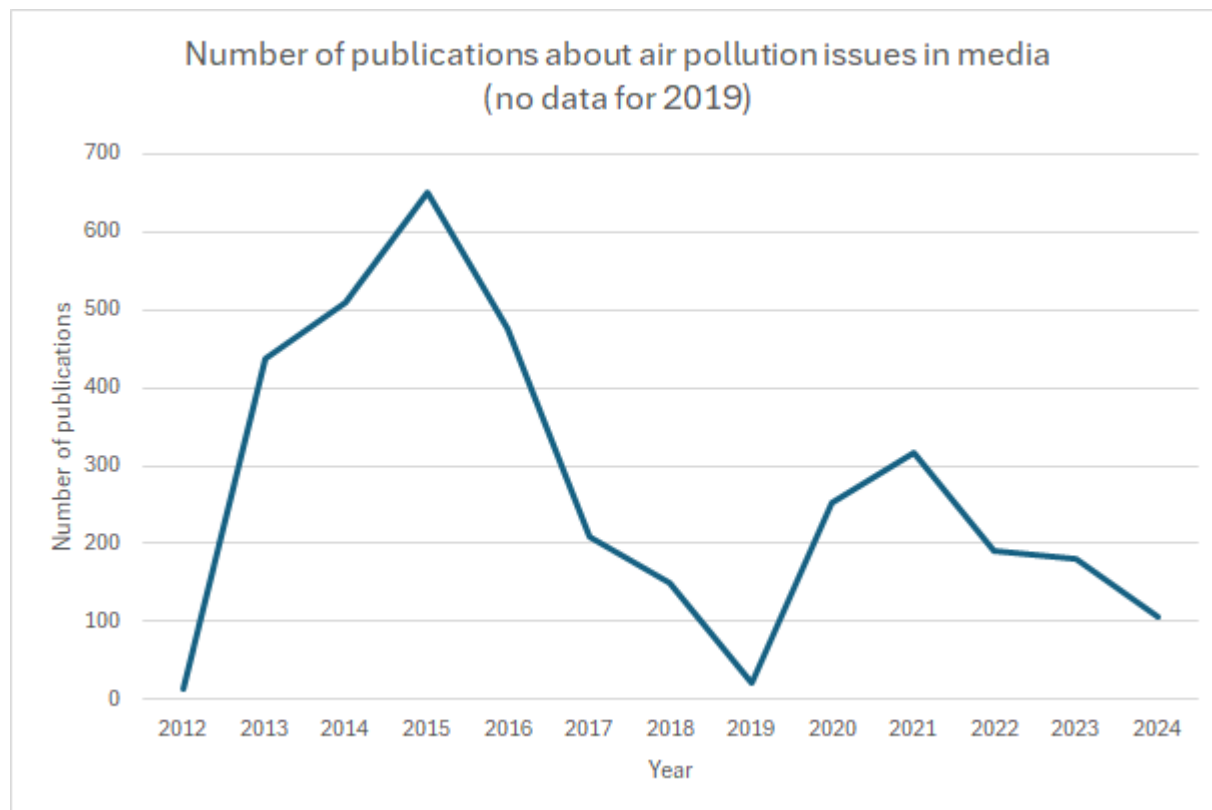


Figure 8.5.9: Pattern 2a Number of media publications on air pollution issues (no data available for 2019)
Source: Own estimation based on data from Krakow Smog Alert (2025a)

The sustained pressure expressed, for example, through residents' opinions on urban policy priorities (Fig. 8.5.10. Pattern 3a), led to changes in the regulations – initially for Krakow alone and in subsequent years for the entire Malopolska Voivodeship. After the introduction of the first restrictions and regulations on fuel quality standards and the ban on burning solid fuels in the city, media interest in the level of mobilisation of residents decreased, which may be attributed to an increase in the percentage of those who evaluate the city's air quality positively.

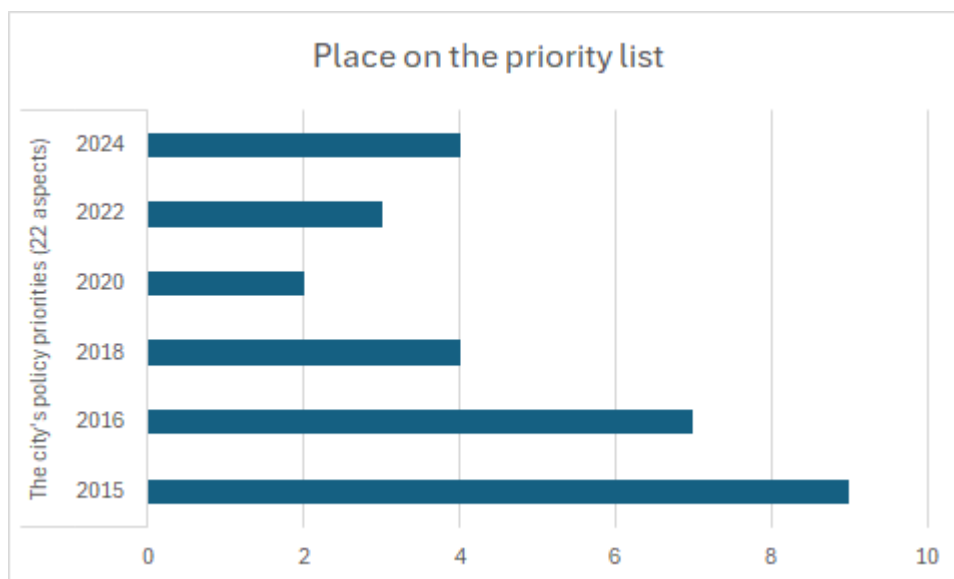


Figure 8.5.10: Pattern 3a Air pollution as an urban policy priority (lower value = higher on the priority list)

Source: Own estimation based on Krakow Barometer Survey reports from 2015, 2016, 2018, 2020, 2022, and 2024 (Krakow City, 2025)

Dynamics at the niche level

The civic initiative focused on the fight to improve air quality in Krakow began in 2012 when a Facebook profile called Krakow Smog Alert (KSA) was set up by three individuals. Initially, the profile published daily information on the air quality in the city. In the autumn of 2012, KSA used the social network for the first time to invite residents to participate in a protest march. At the time, around 300 people gathered to express their concern about the air quality in the city. Other organisations, public persons, city activists and artists associated with Krakow, as well as academics, joined in organising the marches and publicising the air quality issue.

A community formed spontaneously around the Facebook profile, which helped amplify public discontent and put pressure on local authorities. A year later, in December 2013, the association was officially registered under the name Krakow Smog Alert. At the same time, a large-scale social campaign was initiated in the media and through outdoor advertising, which was financed from the bottom up by the community. Activists lobbying started for a change in regulations on permitted energy carriers (exclusion of solid fuels), as well as for the introduction of financial support programmes for the replacement of heating sources with ecological ones and subsidies for thermal modernisation of buildings.

Due to the activities of the KSA, supporting organisations and citizens, coal and wood can no longer be burned in the city from September 2019, and the organisation paved the way for all anti-smog resolutions in Poland (more than 50 other local smog alerts have been created since then). The members of such organisations are mainly residents of cities and towns where air pollution standards are exceeded, but they also involve social organisations, urban movements, scientists, artists, and some politicians. From the merger of the local smog alerts (Krakow, Lower Silesia and Podhale), the Polish Smog Alert (PSA) was established in 2015, bringing together civic movements concerned about poor air quality in Poland.

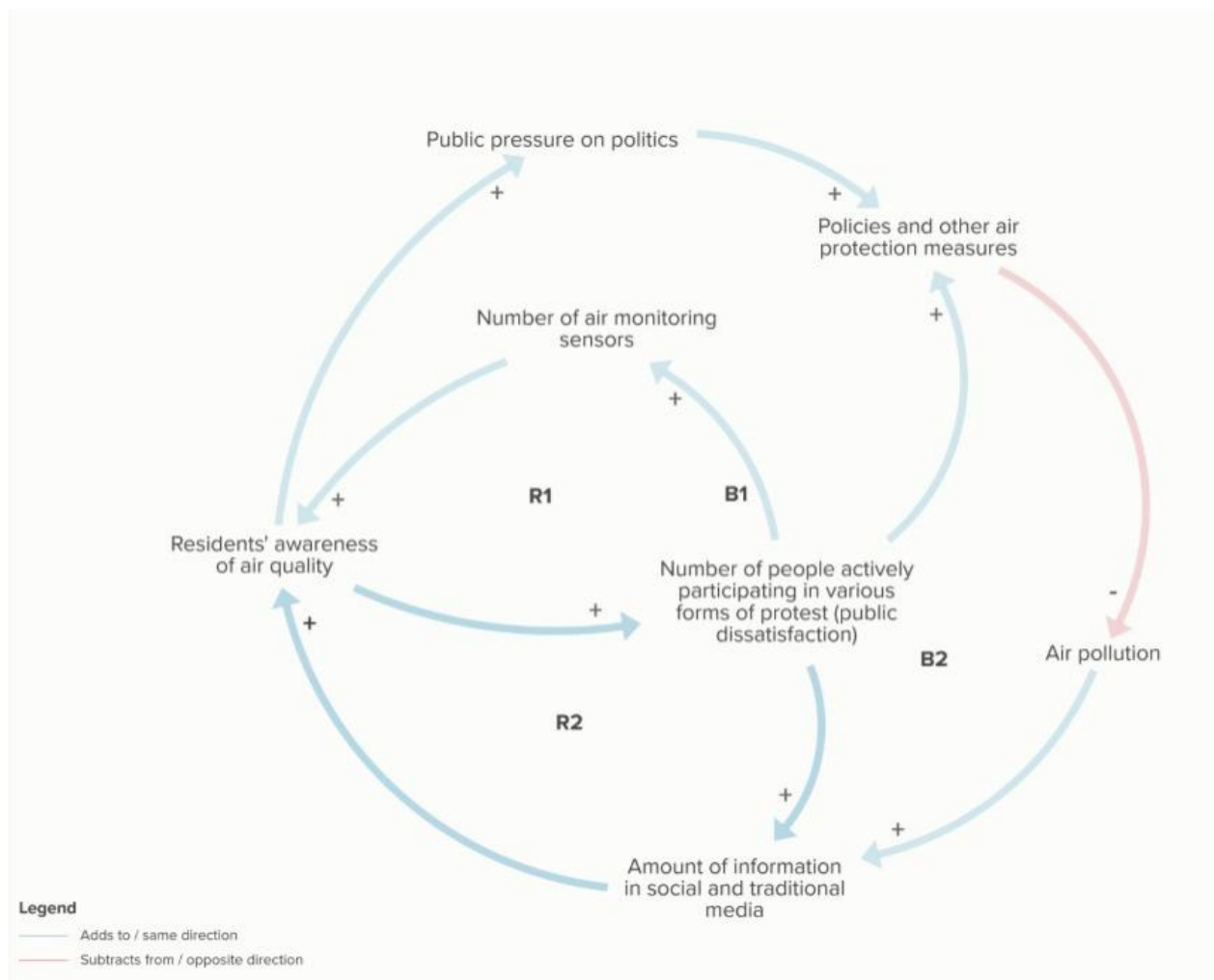


Figure 8.5.11: CLP Dynamics at the niche level

LOOPS:

R1: Number of air monitoring sensors → + Residents' awareness of air quality → + Number of people actively participating in various forms of protest (public dissatisfaction) → +

R2: Residents' awareness of air quality → + Number of people actively participating in various forms of protest (public dissatisfaction) → + Amount of information in social and traditional media → +

B1: Air pollution → + Amount of information in social and traditional media → + Residents' awareness of air quality → + Public pressure on politics → + Policies and other air protection measures → -

B2: Residents' awareness of air quality → + Number of people actively participating in various forms of protest (public dissatisfaction) → + Policies and other air protection measures → - Air pollution → + Amount of information in social and traditional media → +

Niche and Regime Level CLDs merged:

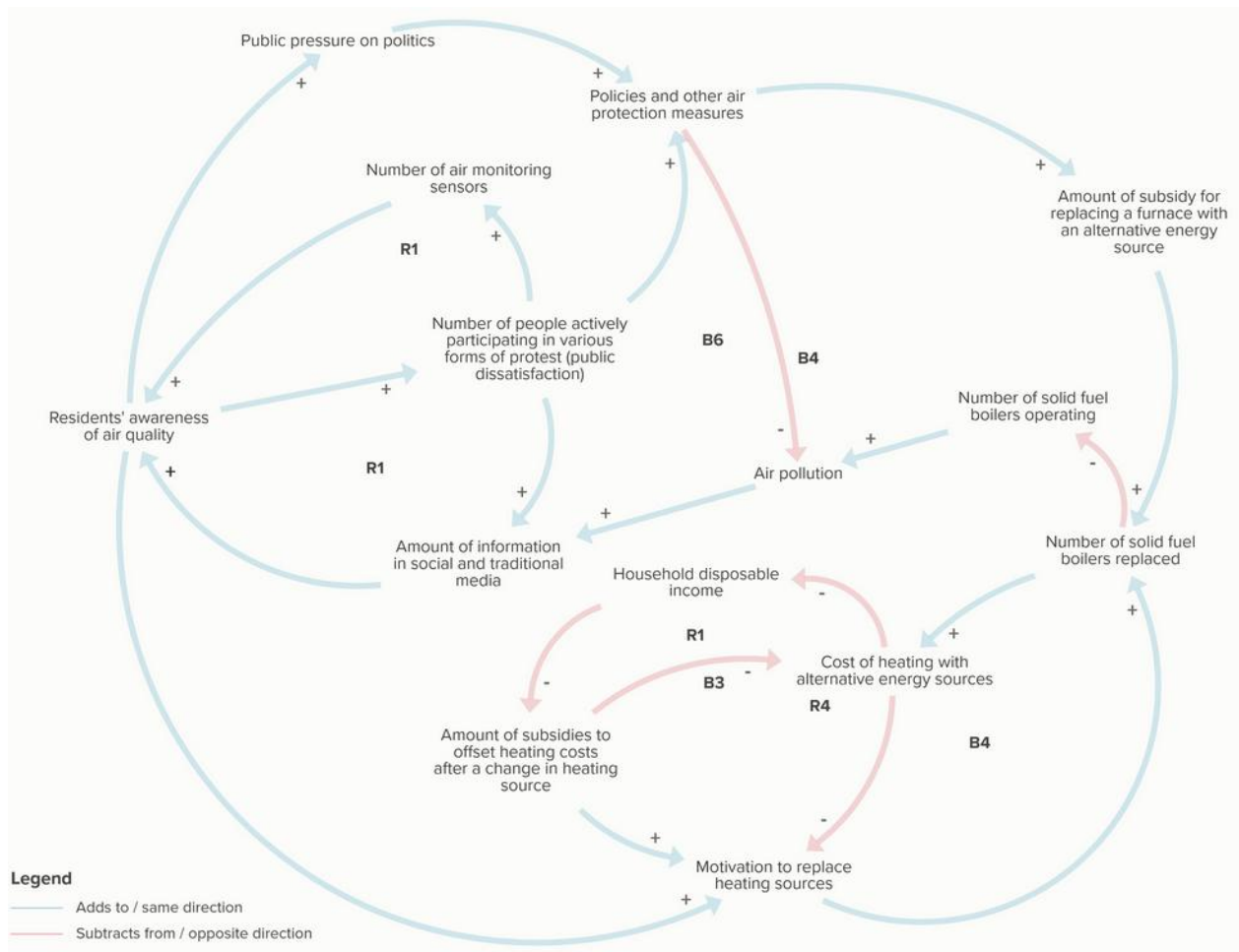


Figure 8.5.12: CLP Niche and Regime Level merged

8.5.5 Summary and Conclusion

8.5.5.1 Origin & Evolution of HE

For many years, smog in Krakow was seen as a natural phenomenon in the city, especially in winter, and public awareness of its harmfulness was negligible. In the year the CAI was founded, Krakow was one of the most polluted major urban areas in the European Union in terms of PM2.5. The Krakow Smog Alert (KSA) was founded in 2012 in Krakow as a grassroots civic initiative. The immediate impulse to set up the KSA came when the three founders of the movement realised the seriousness of the air pollution problem. As a result, a Facebook profile was set up, which served as a way for the founders to systematically inform Krakow residents about the state of the air, as well as the consequences of inhaling smog. KSA's initial strategy was to draw the attention of the public and politicians to the problem of smog. At the same time, a high-profile report based on 20 years of research at the Jagiellonian University on the negative impact of air pollution in Krakow on pregnancy and child development was published, and the topic was picked up by the media. Quite quickly, it became apparent that the inhabitants of Krakow identified with the KSA's demands to start fighting against smog as soon as possible.

The KSA began organising public anti-smog marches. The involvement of local media and creative and advertising companies made it possible to run public awareness campaigns. The support of well-known artists and public figures also helped to publicise the issue. Growing public support and pressure on the authorities led to the adoption of the first anti-smog resolution for Krakow. KSA played a key role in this process, using health arguments and proposing specific policy objectives.

Following the success in Krakow, KSA expanded its efforts to introduce anti-smog regulations throughout the Malopolska region. In 2015, the Polish Smog Alert (PSA) was formally established in response to the need to advocate for the introduction of similar regulations in other provinces and at the national level. In the meantime, local smog alert initiatives were established in different regions of Poland. Over time, the KSA grew from a grassroots movement to become a key player in shaping environmental policy, actively participating in dialogue processes with policymakers, legal institutions and the media. The initial focus was on raising awareness, followed by defending the regulations put in place, resolving legal disputes and improving enforcement. KSA's long-term efforts, in cooperation with residents, scientists, medical doctors, lawyers and authorities, led to the ban on burning coal and wood in boilers, furnaces and fireplaces. This applies to private and commercial buildings, greenhouses and polytunnels, service premises, and industrial plants in the entire city area. The KSA's activities have also contributed to the establishment of more than 50 local smog alerts in Poland and to the establishment of the largest nationwide smog combating programme called "Clean Air". At the moment, 14 out of 16 voivodeships in Poland have introduced regional anti-smog resolutions.

8.5.5.2 Organisation & Activities of HE

Initially, the Krakow Smog Alert's activities were focused on raising public awareness of the smog problem. The founders of the movement worked by trial and error, learning how to use social media, how to organise protests and happenings, and how to cooperate with the media. The KSA brought together people with diverse skills and competencies. By presenting the smog problem and possible solutions in a fact-based way, the activists were able to convince many communities and stakeholders to support their demands. The KSA established cooperation with local media, which took an interest in the topic and were eager to report on the KSA's activities. Activists regularly met with journalists, clarifying concerns and educating them on air quality issues to ensure reliable media coverage. Well-known artists and people from the creative industry supported the KSA, helping to run awareness campaigns and build audience engagement. Companies from the advertising industry provided billboards free of charge and helped to organise community campaigns. At the same time, KSA consistently ensured financial independence from companies benefiting from the energy transition, which helped build its image as an independent expert organisation.

In late 2013, KSA formalised its activities by becoming a registered association. In 2015, the Krakow Smog Alert established the Polish Smog Alert (PSA), which was a direct response to the need to advocate for similar regulations at the national level.

From the very beginning, KSA prioritised professionalism and an evidence-based approach in its activities. Activists based their arguments on scientific data and expert opinions, which increased their credibility in the eyes of policymakers and the public. Collaborations with scientists, medical doctors and lawyers were established, which enabled the KSA to actively and substantially participate in lobbying and working for changes in legislation, including a ban on solid fuels, coal quality standards and subsidies for heat source

replacement and thermal modernisation of buildings. In later years, the KSA focused on supporting the implementation and enforcement of adopted legislation and assisting the activities of local governments.

In summary, the KSA's strategy has evolved from awareness-raising and social mobilisation to professional lobbying, legal action and monitoring the implementation of legislation, based on scientific data, cooperation with experts and maintaining broad public support.

8.5.5.3 Goals & intended Outcomes of HE

The aim of the Krakow Smog Alert since its establishment in 2012 was primarily to draw the attention of the public and politicians to the problem of air pollution in the city and to put pressure on the authorities to adopt measures to improve air quality. Initially, this objective focused on Krakow before gradually expanding to cover the Małopolska Voivodeship and then to other regions in Poland. Their specific policy proposals to improve air quality also evolved over time.

The KSA not only contributed to the implementation of anti-smog resolutions in many cities and regions of Poland but also made a significant contribution to the creation of a law requiring producers and sellers to end the sale of low-quality fuels. Activists also took an active part in consulting and streamlining financial support programmes for heat source replacement and thermal modernisation. The KSA's ultimate goal was to significantly improve air quality and protect the health of residents. The intended long-term effect of KSA's activities was a fundamental transformation of public awareness, policy and social behaviour in Poland in the area of air quality protection.

8.5.5.4 A multilevel perspective on the CAI using the MLP visualization

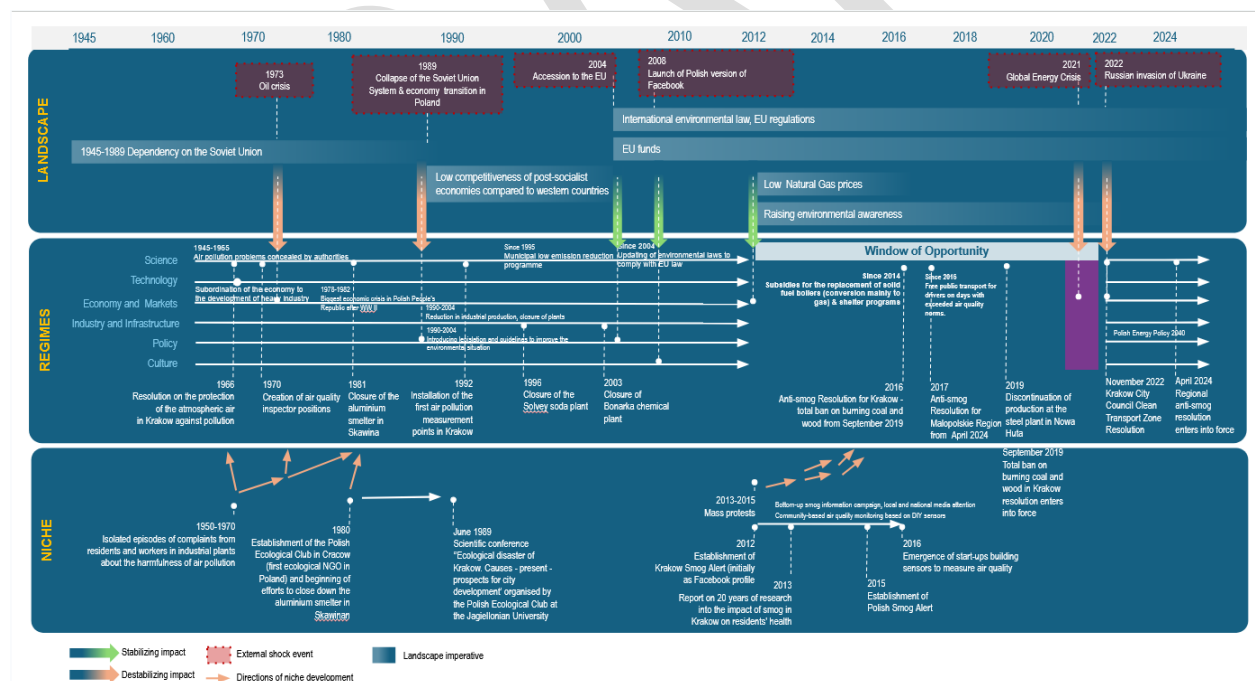


Figure 8.5.13: MLP visualization Multilevel perspective on the CAI

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9. APPENDIX

DRAFT