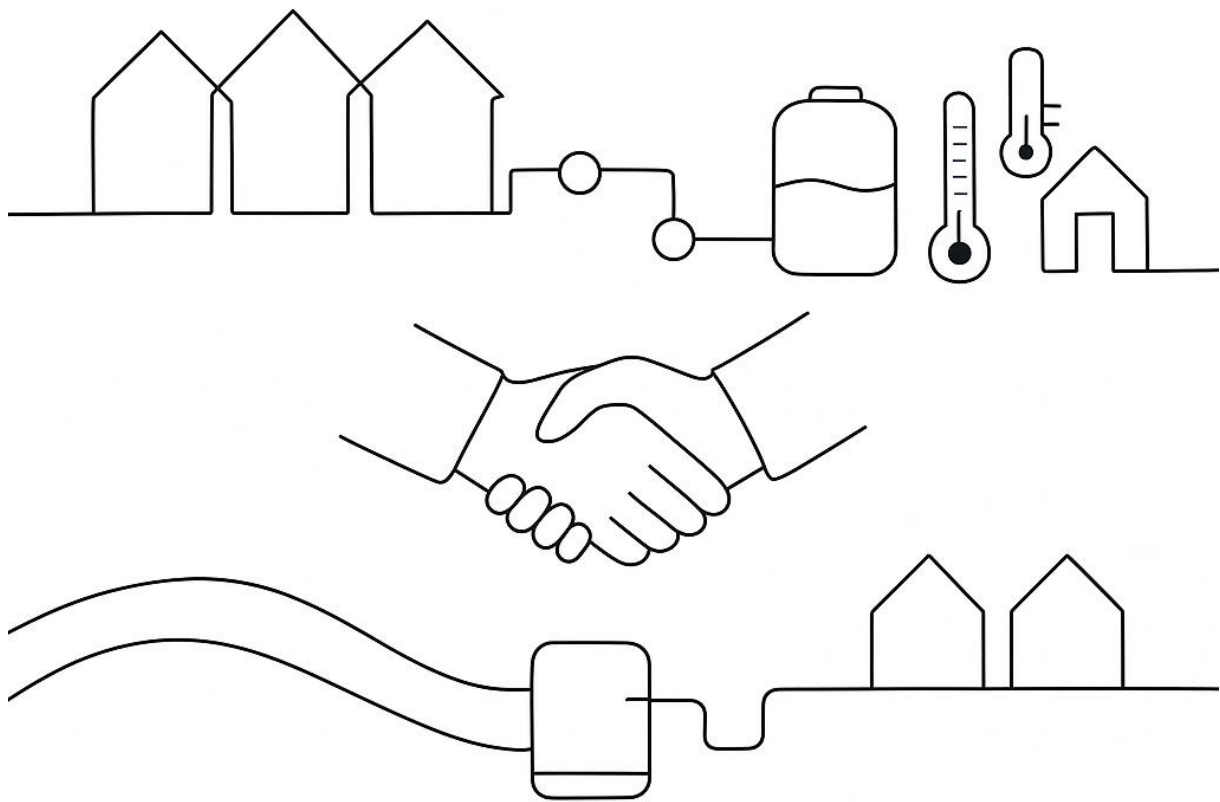# Collaboration in the Municipal Heating Transition: Buurkracht and Four Dutch Municipalities

MSc Thesis CoSEM
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Preface

Dear reader,

After almost five and a half years at TU Delft, my time as a student ends with the completion of this thesis. The path started with my bachelor in Technische Bestuurskunde during the corona pandemic. The beginning was difficult and the experience of studying felt distant, but conditions improved. I met new people, the campus opened again, and studying became both engaging and demanding. After three years with setbacks and some successes, I completed my bachelor's degree.

I continued with the CoSEM master to see what TPM could offer and finally feel the real TU Delft. This choice shaped the final years of my time at TU Delft, which I look back on as the best years of my academic journey. I made new friends, became interested in topics I had not considered before, and time passed quickly.

This thesis feels like a fitting conclusion to my efforts over the past five and a half years. I faced new problems almost every week yet solving them was also what made the work worthwhile. I could test my skills, make my own choices and set my own focus points. The challenges felt endless at times, but they made the process worthwhile.

Several people helped me stay on track, despite these challenges. I want to thank my supervisors, BinBin and Aad, for their guidance. They supported me when things were difficult, and their feedback pushed me to improve my work. I also want to thank Nely, who provided important feedback and made each meeting extra enjoyable. Without these people and their feedback, I would not have enjoyed this process as much as I have and the end result could not have reached the level it has.

I also want to thank the municipal staff and Buurkracht who participated in the interviews. They shared their experience openly and provided insights that became central to this research. I especially want to thank Djoera from Buurkracht for the time, clarity and support offered throughout the journey and all the follow up conversations. This input made a significant contribution to the study.

Finally, I thank my friends and family for their patience and support during this period. Their cheerful support and companionship were invaluable and kept me somewhat sane during tough times. I want to thank everyone one last time, you are what made this journey possible.

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Henrik Jütte
Delft, November 2025

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Abstract

Municipalities carry responsibility for implementing the heating transition, but progress differs even under the same national rules and funding structures. The study examines why collaboration between Buurkracht and four municipalities Boxtel en Sint-Michielsgestel, Leeuwarden, Rotterdam and Zaanstad develops in different ways and how these differences affect neighborhood level work. These municipalities are all part of the BZK12 project with Buurkracht. Buurkracht is an intermediary NGO, who works on facilitating a social heating transition. The focus of this study is the collaboration between these four municipalities and Buurkracht.

The complication is that formal agreements describe roles and tasks, yet daily cooperation depends on informal routines, the municipal context and the ability of organizations to adjust to each other. These dynamics are not visible in policy documents and explain much of the variation seen in practice.

The study uses a qualitative comparative case design. Document analysis and paired interviews provide data on rules in use, working patterns and contextual factors. The interviews formed the bases, interviewing both Buurkracht and the municipality per case. Subsequently followed by a document analysis to check interview findings.

Using these methods, the analysis identifies two important concepts. First, absorptive collaboration capacity, meaning how well municipalities and Buurkracht can take in each other's working styles and translate them into their routines. Second, institutional fit, meaning how well informal expectations and everyday practices align across organizations. When both are strong, collaboration is stable and contextual factors can be worked on together. When either is weak, coordination problems accumulate and implementation slows.

The study concludes that the heating transition depends less on formal design and more on how quickly partners align informal institutions and adapt their routines to local conditions. This points to a need for support that focuses on collaboration capacity and early alignment rather than only technical or procedural guidance.

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Abbreviations

AED – Automated External Defibrillator – n.v.t

BIPV – Building Integrated Photovoltaics – n.v.t

BZK – Ministry of the Interior and Kingdom Relations – Ministerie van Binnenlandse Zaken en Koninkrijksrelaties

BZK12 – BZK Twelve Neighbourhoods Programme – BZK twaalf wijken regeling

CHP – Combined Heat and Power – Warmtekrachtkoppeling

CO2 – Carbon dioxide – Koolstofdioxide

DSO – Distribution System Operator – Netbeheerder

EFG – Energy labels E F and G grouped – Energielabels E F G

ELENA – European Local Energy Assistance – Technical assistance of the European Investment Bank

EZK – Ministry of Economic Affairs and Climate Policy – Ministerie van Economische Zaken en Klimaat

HTV – Heating Transition Vision – Transitievisie Warmte

IAD – Institutional Analysis and Development framework – n.v.t

ISDE – Investment Subsidy for Sustainable Energy and Energy Saving – Investeringssubsidie duurzame energie en energiebesparing

MLG – Multi Level Governance – n.v.t

NEF – National Energy Saving Fund – Nationaal Energiebespaarfonds

NGO – Non Governmental Organisation – n.v.t

NOB – Region Noordoost Brabant – Regio Noordoost Brabant

PAW – Natural Gas Free Neighbourhoods Programme – Proeftuinen Aardgasvrije Wijken

PV – Photovoltaic Solar Electricity – n.v.t

RES – Regional Energy Strategy – Regionale Energiestrategie

RRE – Household Energy Reduction Scheme – Regeling Reductie Energiegebruik

RREW – Household Energy Reduction Scheme for Dwellings – Regeling Reductie Energiegebruik Woningen

RSW – Regional Heat Structure – Regionale Structuur Warmte

RVO – Netherlands Enterprise Agency – Rijksdienst voor Ondernemend Nederland

SAH – Stimulation Scheme for Natural Gas Free Rental Dwellings – Stimuleringsregeling Aardgasvrije Huurwoningen

SDE++ – Sustainable Energy Production and Climate Transition Scheme – Stimulering Duurzame Energieproductie en Klimaattransitie

SEEH – Subsidy Scheme for Energy Saving in Owner Occupied Houses – Subsidieregeling Energiebesparing Eigen Huis

VvE – Owners Association – Vereniging van Eigenaars

WcW – Collective Heat Supply Act – Wet collectieve warmtevoorziening

WUP – District Implementation Plan – Wijkuitvoeringsplan

ZVH – Housing Association ZVH – Woningcorporatie ZVH

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1 Introduction

Climate change mitigation has driven the Netherlands to commit to the national goal of carbon-neutrality by 2050 (Ministerie van Volkshuisvesting 2024). A centerpiece of this effort is the heating transition, which includes phasing out natural gas for heating in all Dutch buildings by 2050 (Ministerie van Algemene Zaken 2024). As part of the national Climate Agreement, every Dutch municipality was required to develop a HTV(Heating Transition Vision) (HTV) by the end of 2021 (Klimaatakkoord 2019). These local heating transition visions provide a roadmap of how neighborhoods can become gas free, outlining preferred alternative heating technologies such as district heating networks or heat pumps and interim targets like isolating a set number of homes by 2030. All four municipalities of interest: Boxtel, Leeuwarden, Rotterdam, and Zaanstad have established their HTV on schedule: Boxtel, Leeuwarden and Zaanstad in 2021, and Rotterdam in early 2022, marking a formal starting point for their heating transitions (Gemeente Boxtel, 2021; Gemeente Rotterdam, 2022; Gemeente Zaanstad, 2021)

Developing a plan, however, is only the first step. The challenge lies in the implementation; converting plans and guidelines into actions in each of the municipality's neighborhoods. This requires not only technical solutions and financing, but critically social collaboration or the process in which actors from different sectors and backgrounds come together in an open space of cooperation, exchanging perspectives and working jointly rather than contesting one another (Ziegler 2017).

This can also be seen in the HTV's of the different municipalities. Rotterdam's heat vision explicitly acknowledges that the municipality cannot achieve a climate-neutral Rotterdam in 2050 alone and that they need their residents, companies, property owners, partners, and the national government to succeed (Gemeente Rotterdam 2022). Zaanstad's vision similarly notes that executing their plans must be done in collaboration with residents, businesses, and other parties (Gemeente Zaanstad 2021). While the HTV's of Boxtel and Leeuwarden do not mention this point explicitly, the plans still warrant similar collaboration.

In short, citizen and stakeholder engagement is crucial for an effective heating transition, and many municipalities lack precedent or capacity for orchestrating such engagement at scale (Gemeente Boxtel 2023). Early experiences from around the municipalities show that where resident participation is high, initial steps towards implementation are being taken, but many municipalities struggle to mobilize the "mass" of average households beyond the usual pioneers (Gemeente Boxtel 2021, 2023). This is in line with widely accepted theories of innovation, like the diffusion of innovations theory (Rogers 2008), which shows that early adopters are typically a small, enthusiastic minority, while mobilizing the majority is significantly more challenging.

Buurkracht offers the municipalities a way to engage their citizens for the heating transition through the BZK funded program that supports neighborhood based engagement in the heating transition. This collaboration affects how each municipality approaches its plans because Buurkracht's method relies on local conditions and existing routines (Buurtkracht 2025). Before examining this partnership, the specific context of each municipality needs to be outlined so that the later analysis can be interpreted correctly.

1.1 Municipal context

Including concise context for each municipality is essential because the heating transition does not follow a single template. Early conversations with Buurkracht and municipal staff and the local plans point to physical conditions such as housing stock, density, heat sources and grid capacity as factors that influence choices (Gemeente Boxtel, 2021, 2023; Gemeente Leeuwarden, 2021; Gemeente Rotterdam, 2022; Gemeente Zaanstad, 2021). Community attributes including income, energy poverty risks and ownership patterns, together with rules in use such as local policies, partnerships and shifting national frameworks, shape what is technically possible, socially acceptable and financially viable (Hodgson, 2025; Milchram et al., 2019; North, 1990; Ostrom, 2009; Pesch et al., 2017). Presenting these factors upfront clarifies the conditions under which actors operate, explains why identical national mandates lead to different local pathways and links later findings to place specific constraints. These short context sections turn the municipalities into comparable cases rather than background descriptions. The four contexts are introduced below.

Boxtel: Boxtel has lower housing density, many single family homes and a mixed building stock (Gemeente Boxtel, 2021). These conditions limit the feasibility of district heating except in specific locations. The municipality therefore prioritizes insulation, ventilation, electric cooking and hybrid or individual heat pumps, using clustering only when planned works make this practical (Gemeente Boxtel, 2023). Progress depends on coordination with the regional network operator, housing associations and local groups because municipal capacity is limited. Changing national rules and financing arrangements add further constraints (Gemeente Boxtel, 2021). The municipality is shaped by its rural context and smaller organizational size (Gemeente Boxtel, 2023).

Leeuwarden: Leeuwarden contains neighborhoods that differ in density, building age and access to potential heat sources such as geothermal energy (Gemeente Leeuwarden, 2021). This leads to a differentiated strategy that applies full electric options in newer areas, collective heat in dense areas and hybrid solutions where needed. Early steps focus on executable neighborhood plans and insulation. Execution relies on cooperation with housing associations, the DSO, local initiatives and businesses. Key uncertainties arise from grid capacity, national financing reforms and the availability of reliable low carbon heat sources (Gemeente Leeuwarden, 2021). The municipality is further shaped by its differences across dense urban neighborhoods and smaller villages. Furthermore, the municipality strives to be inclusive by including all these different kinds of neighborhoods in their heating transition strategy (Gemeente Leeuwarden, 2021).

Rotterdam: Rotterdam's context is shaped by its scale and the port industrial complex, which provides both large heat demand and access to industrial heat sources (Gemeente Rotterdam, 2019, 2022). The municipality combines expansion and renewal of district heating with refurbishment of large housing blocks and neighborhood specific plans. This requires close cooperation between building owners, heat companies, the network operator and national government. Core constraints relate to the sequencing of heat sources, governance of heat networks and the need to maintain affordability during citywide scaling. Due its larger size the municipality consist of many organizational layers, characterized by a more hierarchical way of working (Gemeente Rotterdam, 2022).

Zaanstad: Zaanstad includes dense areas suitable for district heating and areas better suited for electric or hybrid heating solutions (Gemeente Zaanstad, 2021). The municipality selects neighborhoods based on network proximity, ownership structure, planned investments and source prospects.

Implementation depends on collaboration with housing corporations, the DSO, market parties and residents. Key constraints include uncertainty about national legal and financing frameworks, the presence of energy poverty risks and split incentives between owners and tenants. The municipality here adopts a way working highlighted by feedback loops between citizens, companies and the municipal organization (Gemeente Zaanstad, 2021).

These contextual notes show the conditions under which the four municipalities organize their heating transition work. They also set the parameters in which Buurkracht operates in each case, since its tasks depend on local housing conditions, community attributes and existing governance routines. The next section introduces Buurkracht and explains its role in the BZK program within these municipal settings.

1.2 Buurkracht

To illustrate how citizens are included and engaged in context of these four municipalities, this thesis examines Buurkracht, a non-profit intermediary that works in four pilot cities. Founded in 2014, Buurkracht (literally "neighbor power") is a Dutch social enterprise dedicated to helping neighbors discover and boost their collective power in service of local sustainability goals. Its mission encompasses energy saving, greening and community safety initiatives (Buurkracht 2025). Governance is maintained by a board of directors and a supervisory council whose members represent local government, academia and civil-society networks. Since 2024, core funding comes from the Ministry of the Interior and Kingdom Relations, ensuring both accountability to public funders and independence from commercial interests (Buurkracht 2025).

Important to consider is that Buurkracht operates within the wider system of the Dutch heating transition in which national policy sets the objectives, municipalities are responsible for local implementation and intermediaries support resident engagement. Through the BZK funded program, Buurkracht is positioned as one of these intermediaries and works in the four municipalities studied here. Its role depends on the local governance structure, the physical conditions in each neighborhood and the rules in use at municipal level (Buurkracht 2025).

Buurkracht's recent trajectory has been shaped by a structured selection process for the four pilot municipalities. Initially, a long list of candidate municipalities was drawn up based on criteria such as willingness to commit (including financially) to long-term support for resident initiatives, municipal size sufficient for twelve neighborhood teams, and positive past experiences with supporting local initiatives. This list was then narrowed down using additional criteria: a strong municipal ethos of citizen participation, the local presence of Buurkracht neighborhood mentors with strong networks, and municipal willingness to co-finance and provide staff capacity. After final agreements were signed with Rotterdam, Zaanstad, Boxtel, and Leeuwarden, the internal Buurkracht kick-off took place in February 2024, marking the start of coordinated planning and collaboration between municipal and Buurkracht project teams (Buurkracht 2025).

1.2.1 Organizational structure and key roles

Effective collaboration between Buurkracht with neighbors and the municipality hinges on clear roles, responsibilities, and communication channels. Buurkracht's organizational setup ensures that strategic oversight, municipal coordination, and grassroots facilitation are each handled by the right actors. The following section outlines the main structural components, ranging from the national hub down to neighborhood mentors (Buurkracht 2025).

- **National hub:** a central secretariat of five to seven full-time staff maintains Buurkracht's methodology, develops and updates the digital platform (Buurkracht Online and app), negotiates grant agreements, provides communication support for the projects and synthesizes lessons learned across all pilot sites (Buurkracht 2025).
- **Project Leader buurkracht:** one full-time project leader per municipality oversees daily management of the partnership, convenes the project group, represents Buurkracht in the steering committee and works together closely with the municipality (Buurkracht 2025).
- **Neighborhood mentors:** each mentor is embedded in one of the twelve selected districts and is responsible for recruiting and coaching small neighborhood teams. Mentors provide localized facilitation, conflict mediation and technical guidance.
- **Relationship manager:** ensures long-term vision alignment, manages both internal and external communications for Buurkracht (Buurkracht 2025).

1.2.2 Six-phase roadmap methodology

Buurkracht's work follows a deliberate, stepwise approach also known as the roadmap, designed to move neighborhoods systematically from broad planning through hands-on action to lasting cooperation between neighbors and with the municipality. By breaking the process into six distinct phases, each with its own objectives, tools and stakeholder interactions, the roadmap ensures that decisions are grounded in data. Furthermore, it ensures that recruitment and team building are targeted, that local initiatives are well-supported, and that successful neighborhood teams become embedded partners in municipal heating-transition plans. In the section below, each phase will be explained (Buurkracht 2025).

- **Phase 1 scoping and selection:** during Scoping and Selection, energy scenario projections and local heating transition plans are analyzed alongside participation scans and stakeholder workshops to choose twelve target neighborhoods and identify existing initiatives and key contacts (Buurkracht 2025).
- **Phase 2 engagement and recruitment:** engagement and Recruitment combines door-to-door canvassing, social media outreach, and exploratory interviews led by neighborhood mentors and municipal staff to assemble a diverse group of residents (Buurkracht 2025).
- **Phase 3 team building:** in Team Building, recruited residents participate in facilitated workshops that transform individual motivations into a shared purpose and solidify teams of three to eight members (Buurkracht 2025).
- **Phase 4 action design and implementation:** action Design and Implementation empowers each neighborhood team to select and carry out three to five local initiatives, supported by small grants, communication resources, and logistical assistance from both Buurkracht and city staff (Buurkracht 2025).
- **Phase 5 peer exchange:** peer Exchange brings representatives from each neighborhood team together in a joint working group and on the Buurkracht online platform to share lessons learned, best practices, and emerging challenges (Buurkracht 2025).
- **Phase 6 embedding and scaling**: embedding and Scaling transitions mature neighborhood teams into formal partners within municipal implementation plans or into independent community organizations, ensuring their successful practices are integrated into the city's long-term heating transition strategy (Buurkracht 2025).

Additionally phase 1 also includes a joint "Routekaart" or roadmap process with the municipality. Buurkracht gathers and analyzes extensive data, including resident types, housing stock, savings potential, and adoption rates for energy measures alongside municipal data on neighborhood engagement. These analyses are refined in three sessions with diverse municipal departments and partners. The first session maps 'human energy' and existing initiatives. This process in quantified per neighborhood in a ''sterke schouder score'', which is a score that enables Buurkracht to gain insight into who would be willing to actively participate (Figure 1) (Buurkracht 2025).
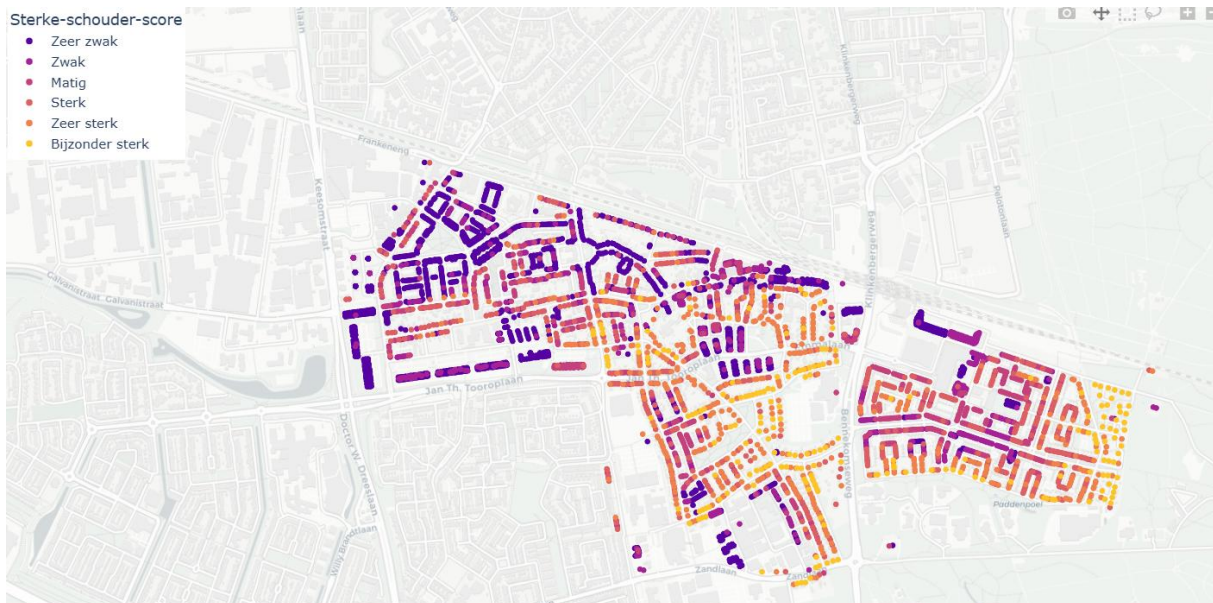
Figure 1. Sterke schouder kaart (from personal communication D. Eerland 26 June 2025).

The second session validates and enriches these insights with local professionals like district managers and community workers, and the third session ranks neighborhoods in a matrix on resident engagement and sustainability potential to select the final twelve target areas. Additionally, a stakeholder scan is performed to map key players such as housing corporations, energy cooperatives, local councils, businesses, and grid operators to facilitate connections and strengthen collaboration (Figure 2) (Buurkracht 2025).
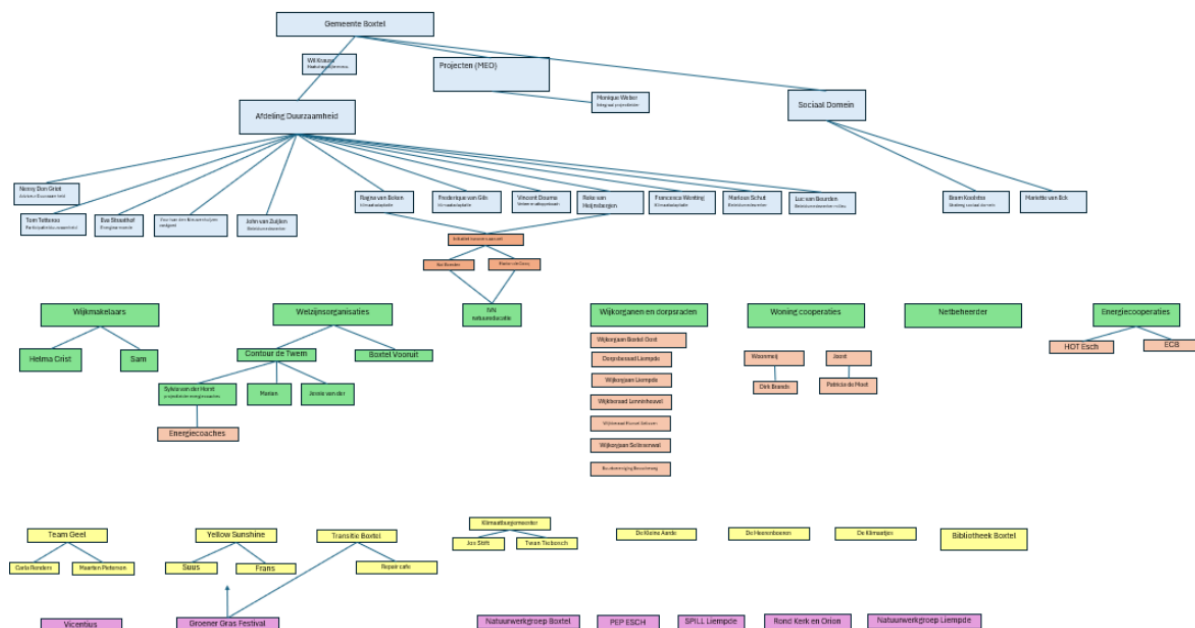
Figure 2. Stakeholder map (from personal communication D. Eerland 26 June 2025).

1.2.3 Preliminary observations and continuous learning

During the first year (2024), each of the four pilot municipalities formed twelve neighborhood teams, collectively launching a range of neighborhood actions: information markets, collective purchase campaigns, and community events such as heat walks. While systematic monitoring is still underway, several noteworthy patterns have emerged:

- **Recruitment insights:** direct, door-to-door outreach and small-scale social activities consistently outperformed large-scale campaigns in attracting new participants, highlighting the value of personal contact (Buurkracht 2025).
- **Trust building:** in neighborhoods with prior skepticism toward the city government, mentors invested extra time in informal gatherings and introductions to local partners before teams could coalesce (Buurkracht 2025).
- **Contextual adaptation:** neighborhood teams in dense urban areas relied on group events and digital engagement, while those in more dispersed or rural neighborhoods depended heavily on face-to-face meetings (Buurkracht 2025).
- **Learning loops:** feedback from neighborhood teams and municipal staff is channeled weekly into the national coordination hub, leading to iterative refinements, such as updating recruitment scripts and adjusting the sequence of participation scans for better alignment with local schedules (Buurkracht 2025).

These early lessons highlight Buurkracht's role as a live laboratory for testing how formal planning instruments and informal practices converge in real-world settings. As monitoring data become available, they will be integrated into the digital dashboard to inform both Buurkracht's national coordination and each municipality's WUP adjustments (Buurkracht 2025).

1.2.4 BZK-12 project

Buurkracht's work in the four pilot municipalities is supported through a subsidy agreement with the Ministry of the Interior and Kingdom Relations. This subsidy pays for the first year and the municipalities fund the second and third year. This subsidy is part of the Energiebespaarcoalitie, a

national program aimed at strengthening local energy-saving efforts (Ministerie van Volkshuisvseting 2025). The agreement sets clear operational requirements. Buurkracht must work in four municipalities and support twelve neighborhoods in each municipality. The tasks focus on practical resident engagement and the heating transition. Buurkracht is expected to activate households to reduce energy consumption, stimulate insulation measures and prepare residents for heating solutions that do not rely on natural gas (Buurkracht, 2025). The subsidy formalizes this collaboration by defining scale, duration, reporting obligations and the division of responsibilities. It establishes Buurkracht as an operational partner in municipal neighborhood-based transition work and provides the financial and administrative foundation for deploying mentors, forming neighborhood teams and running local initiatives (Ministerie van Volkshuisvseting 2025).

Buurkracht operates within two national coalitions that shape the way this program is carried out. The Energiebespaarcoalitie is a national alliance coordinated by the Ministry of the Interior. It focuses on accelerating energy savings and brings together government bodies, market parties and social organizations. The subsidy that funds the first year of Buurkracht's three-year program is part of this coalition. This determines the financial framework and expected outputs for Buurkracht's work in the pilot municipalities (Ministerie van Volkshuisvseting 2025).

Alongside this, Buurkracht is also a partner in the Participatiecoalitie, a national partnership of five civil-society organizations that supports municipalities in involving residents in the heating transition. Its role in this coalition gives Buurkracht a national mandate to apply its participatory method in municipal programs (Participatiecoalitie 2025).

Together, these coalitions explain how Buurkracht became involved in the BZK program. In early conversations, Buurkracht clarified that participation in the Energiebespaarcoalitie project was initiated from the national level. As a member of the Participatiecoalitie, they were instructed to implement the BZK program and collaborate with four municipalities that met their own criteria. Municipalities could join if they were willing to adopt the Buurkracht method, allocate staff capacity and embed Buurkracht's stepwise roadmap into their neighborhood planning routines. According to Buurkracht, this willingness was a necessary precondition for participation in the three-year program, because the effectiveness of the Energiebespaarcoalitie depends on municipal alignment with its participatory approach (Buurkracht 2025; Ministerie van Volkshuisvseting 2025; Participatiecoalitie 2025).

The result is a hybrid arrangement. The Energiebespaarcoalitie provides the subsidy and program structure. The Participatiecoalitie provides a participatory approach and methodological basis. Buurkracht works at the intersection of both and translates national policy objectives into neighborhood-level engagement.

1.3 Research gap

The previous sections showed that the heating transition is shaped by three elements. National policy sets a shared mandate for all municipalities to produce Heating Transition Visions. Informal ways of working together then add a new challenge. Local variation then creates different starting points because municipalities differ in housing stock (spatial), capacity (political) and community characteristics (social and economic). Buurkracht operates within this system through the BZK program as an intermediary that supports neighborhood level engagement. This combination raises questions about how collaboration between municipalities and Buurkracht works in practice.

Formal rules provide the baseline conditions for collaboration but do not always give clear guidance on operational tasks. Institutional theory shows that formal rules shape behavior by defining roles, resources and authority (Hodgson, 2025. North, 1990. Ostrom, 2009). Collaborative governance research stresses that clarity is needed for joint action (Ansell and Gash, 2008). Evidence from municipal documents confirms this (Gemeente Boxtel 2021, 2023; Gemeente Leeuwarden 2021; Gemeente Rotterdam 2022; Gemeente Zaanstad 2021; Warmteprogramma 2025). Agreements differ in detail and do not always assign responsibility for tasks such as technical studies, funding, resident engagement or monitoring (Gemeente Boxtel, 2021, 2023. Gemeente Leeuwarden, 2021. Gemeente Rotterdam, 2022. Gemeente Zaanstad, 2021). Early contact with Buurkracht and policy documents show that unclear task division delays feasibility studies and slows resident engagement (Gemeente Boxtel, 2021, 2023; Gemeente Leeuwarden, 2021; Gemeente Rotterdam, 2022; Gemeente Zaanstad, 2021; NLPW, 2025) . These findings indicate a gap between the formal mandate and the operational requirements of collaboration.

Implementation also depends on informal routines, yet these practices are not well documented (Gemeente Boxtel 2021, 2023; Gemeente Leeuwarden 2021; Gemeente Rotterdam 2022; Gemeente Zaanstad 2021; NLPW 2025). Literature highlights that informal norms such as trust and local working styles shape how formal rules are used (Ostrom, 2009. Pesch et al., 2017). Street level bureaucracy research shows that front line workers use discretion in daily interactions and that this affects collaboration outcomes (Lipsky, 2010). These informal dynamics influence implementation yet remain analytically underdeveloped.

Local context adds a third source of variation. Work on multi-level governance and value based learning shows that capacity, infrastructure and social conditions shape how policies are adapted locally (Hoppe et al., 2015. Milchram et al., 2019). The four municipalities operate under shared national rules but differ in size, housing stock, heat sources and administrative capacity. Municipal documents and interviews confirm that dense cities experience difficulties reaching specific resident groups, while smaller municipalities have limited staff for multiyear engagement (Gemeente Boxtel, 2021, 2023. Gemeente Leeuwarden, 2021. Gemeente Rotterdam, 2022. Gemeente Zaanstad, 2021). National guidance gives limited direction on how collaboration models should adjust to these local conditions.

Existing studies often examine technical design, subsidy schemes or engagement strategies separately. Few studies analyze how formal rules, informal routines and local contexts interact within municipal heating transitions. Research on intermediaries shows that they fill gaps between actors but offers limited insight into how they work across different municipal settings (Broers et al., 2023. Warbroek and Hoppe, 2018). This leaves open how municipalities allocate responsibilities, how day to day coordination unfolds and how contextual variation shapes collaboration outcomes.

This thesis addresses this gap by analyzing how formal rules, informal routines and contextual factors interact in the collaboration between Buurkracht and four municipalities. The next section introduces the main research question that guides this analysis.

1.3.1 Main research question
The research gap shows that collaboration in the municipal heating transition is shaped by the interaction between formal rules, informal routines and local context. These elements influence how municipalities and Buurkracht coordinate their work and how neighborhood level action develops. To examine these interactions in a systematic way, the study uses the analytical framework introduced in

the literature review, which combines institutional theory, collaborative governance and street level bureaucracy with insights on local context and learning (North, 1990. Ansell and Gash, 2008. Ostrom, 2009. Milchram et al., 2019).

The following main research question guides the analysis:

What are the key similarities and differences in the collaboration between Buurkracht and the four municipalities and how do formal rules, informal routines and local contextual factors explain this variation?

This question focuses on how the collaboration operates rather than on technical heating solutions. The analysis is descriptive because it documents how the collaboration is structured and experienced. It is also explanatory because it examines why the four collaborations develop differently. By answering this question, the study seeks to clarify which conditions support effective collaboration and which conditions slow down progress.

1.4 CoSEM's relation to this thesis

This thesis is the final part of the CoSEM master at the TU Delft. Complex Systems Engineering and Management or CoSEM is about learning to understand how complex socio-technical systems behave when different actors, rules and technologies interact. This thesis fits within that aim by examining the heating transition as an integrated governance system rather than a technical project. The study treats municipal planning instruments, national legislation, informal working routines and neighborhood conditions as connected components that together shape local decision-making. This reflects the CoSEM view that system performance cannot be explained by one factor alone but emerges from multiple layers operating at the same time.

The research analyses how formal rules from the national level translate into municipal practice and how these rules interact with informal routines inside municipal organizations and in their collaboration with Buurkracht. This reveals the institutional side of the system. At the same time, the study considers technical constraints such as housing stock, heat options and grid capacity. These constraints influence what municipalities can decide and how collaboration unfolds. Combining these elements mirrors the CoSEM approach of studying engineering choices together with governance structures and social behavior.

The comparison of four municipalities illustrates how similar national instruments lead to different local outcomes. These differences arise from variation in capacity, administrative culture, trust relations, staffing and existing networks. The thesis shows how these local features shape the way actors coordinate their work and how neighborhood-level action develops. This comparative logic follows the CoSEM idea that system understanding improves when patterns are observed across different factors and cases rather than in a singular view.

The methodological approach also reflects CoSEM thinking and lessons. The study combines document analysis, structured interviews, cross-case synthesis and institutional analysis. This mix of methods supports a systematic examination of actor roles, rule structures and behavioral patterns. It also ensures that findings are traceable and grounded in data rather than assumptions. The use of elements of the IAD framework brings together rules, actors and context in a structured way, which is consistent with CoSEM principles on transparency and analytical structure. It allows the design of an improved collaboration, which is a central theme in the master.

Overall, the thesis demonstrates how a CoSEM perspective can be applied to a public governance challenge. It breaks down a complex system into understandable components, examines how these components interact and uses this understanding to derive actionable insights. The work follows the CoSEM emphasis on design, engineering, governance and behavior in one integrated analysis and contributes to improving decision-making in the heating transition at the local level.

2 Literature review

This literature review synthesizes key theoretical and empirical contributions relevant to understanding how municipal heating transitions in collaboration with Buurkracht unfold in practice. It begins by examining the institutional context to clarify how formal rules and informal norms evolve, interact, and shape governance processes. Building on these foundational perspectives, the review then turns to NGO–municipality collaboration, highlighting collaborative governance frameworks and comparing case-study examples of intermediary roles in heating and broader energy transitions.

Next, the discussion focusses on street-level bureaucracy, illustrating how front-line actors exercise discretion and build trust to translate high-level policy into neighborhood-level action. Implementation theories such as top-down vs. bottom-up approaches are then introduced to show how formal mandates and local adaptations co-produce outcomes. Finally, the review integrates multi-level governance and value driven social learning frameworks to explain how systemic, normative, and organizational dynamics converge and change over time.

By weaving together, the institutional, collaborative governance, street-level bureaucracy, and multi-level governance/social learning perspectives, this chapter establishes a comprehensive foundation for analyzing how Buurkracht's partnerships with four Dutch municipalities facilitate the transition from formal HTVs to concrete, community-driven initiatives.

2.1 Institutional context; the formal and informal institutions

Different researchers have offered different perspectives on what institutions are, how they function, and how they evolve over time. Among the most influential are the contributions of Douglass North, Elinor Ostrom, and Geoffrey Hodgson. Each offers a distinct conceptualization of formal and informal institutions, as well as different views on their sources of authority, mechanisms of enforcement, and potential for change. While there is broad agreement that institutions are essential for structuring human behavior and enabling cooperation, the criteria used to distinguish between formal and informal institutions vary considerably. Understanding these differences is important for analyzing institutional dynamics in complex governance settings such as municipal heating transitions. The following section outlines and compares their respective approaches.

2.1.1 Definition of institutions

Institutions are defined as the systems of rules that structure human interactions (North 1990). They play a fundamental role in shaping the governance and implementation of sustainability transitions. Following North's (1990) widely cited definition, institutions are "the rules of the game in a society," encompassing both formal, codified regulations and informal, socially embedded norms. However, as institutional theory has evolved, different definitions and interpretations of what distinguishes formal from informal institutions and how each type changes over time have emerged.

2.1.2 Different views on institutions

According to North (1990), formal institutions are rules that are written down and officially enforced, such as constitutions, laws, regulations, and contracts. These institutions are established by governments or recognized authorities and are usually supported by legal mechanisms. Informal institutions, in contrast, are unwritten rules such as traditions, customs, norms, and culture. They are maintained through social expectations and enforced through peer pressure, trust, or reputation rather than through legal sanctions.

North (1990) argues that informal institutions tend to be slow to change. He sees them as deeply rooted in culture and history, which makes them stable but also resistant to reform. Because of this, North views institutional change as a gradual and path-dependent process, where the past strongly influences what is possible in the future. This idea suggests that changing informal institutions often takes generations.

Ostrom (2009), for example, highlights how communities can develop their own informal rules for managing shared resources, such as forests or irrigation systems. These rules are often created through local cooperation and are adapted over time based on learning and experience. Ostrom shows that informal institutions can be flexible and responsive, especially when people have the opportunity to participate in decision-making.

While Ostrom's (2009) work primarily focuses on informal, community-based rules, she also offers a clear understanding of what constitutes formal institutions. In her framework, formal institutions are those rules that are backed by legally recognized authorities and enforced through formal mechanisms, such as governments or legal systems. These include national laws, statutory regulations, and administrative procedures. Ostrom acknowledges that formal institutions are important for providing a supportive framework within which local governance can function. They can help institutionalize agreements, resolve disputes, and provide long-term stability for collective action arrangements. However, she consistently argues that formal institutions alone are insufficient for effective governance of complex systems. Instead, successful institutional arrangements typically involve a layered interaction of formal structures with locally adapted, informal rules.

Hodgson (2025) also challenges North's view of informal institutions as inherently rigid. He argues that informal institutions are simply those rules enforced outside of the legal system. This means they can be either stable or highly dynamic. Hodgson gives several historical examples where informal norms shifted quickly in response to legal changes or social movements, such as the changing roles of women in the workforce or attitudes toward public health. In his view, informal institutions can change rapidly, particularly when formal reforms or social pressures create new expectations.

Hodgson (2025) also provides precise and functional definition of formal institutions. According to him, formal institutions are rule systems that are either created by or enforceable through a legal system. This means that the defining characteristic of a formal institution is not whether a rule is written or official, but whether it can be upheld by courts or other legal authorities. Formal institutions include constitutions, laws, and regulatory procedures that are backed by the coercive power of the state. Hodgson distinguishes this legal enforceability from other commonly used markers, such as whether a rule is codified or planned. In doing so, he corrects what he sees as conceptual ambiguities in earlier institutional theory, including North's. For Hodgson, the presence of potential legal sanction is what separates formal from informal institutions, making the distinction both clearer and more applicable to empirical analysis.

2.1.3 Comparing perspectives on institutions

While North, Ostrom, and Hodgson all agree that institutions shape behavior and structure interactions, they differ in how they define, distinguish, and conceptualize both formal and informal institutions.

Regarding formal institutions, North (1990) defines them as written rules such as laws, contracts, and constitutions, established and enforced by governments. These institutions are deliberately designed and enforced through state-sanctioned mechanisms. Ostrom (2009) adopts a similar understanding, viewing formal institutions as legally backed frameworks such as statutory regulations and policy instruments. However, she stresses that their effectiveness is often limited unless complemented by informal rules that are adapted to local contexts. Hodgson (2025) refines this distinction by focusing on the *enforceability* of rules rather than their form. For him, the defining feature of a formal institution is its potential to be upheld by a legal system. This means that a rule may be informal even if written down, as long as it is not legally enforceable. Hodgson's perspective offers a more operational definition, based on legal authority rather than format or intentional design.

In terms of informal institutions, North (1990) characterizes them as long-standing norms, customs, and conventions that evolve slowly and provide historical continuity. In his view, these are embedded in culture and therefore resistant to short-term change. Ostrom (2009) challenges this rigidity by showing that informal institutions, especially those developed in self-organizing communities, can be flexible and evolve through learning and cooperation. Hodgson (2025) supports this dynamic view and further distinguishes informal institutions by their enforcement through social rather than legal means. He emphasizes that informal institutions are not necessarily unwritten or traditional, and can change rapidly in response to political, legal, or cultural shifts.

In summary, North sees formal institutions as legally codified rules and informal institutions as slowly evolving cultural norms. Ostrom views both types as interdependent and adaptable, with informal institutions playing a key role in self-governance. Hodgson provides definitional clarity by distinguishing the two based on their enforcement mechanisms: formal institutions are legally enforceable, while informal ones are not. His framework accommodates both slow and fast-changing informal institutions, offering a more flexible model for empirical research.

These different perspectives are valuable for this research, as they highlight not only how formal and informal institutions are defined, but also how they interact and change over time. In municipal heating transitions, where formal legal instruments operate alongside informal negotiation, trust-building, and community engagement, an integrated understanding of both types is essential.

2.1.4 Trajectories

Pesch et .al. (2017) deepen the insight into how formal procedures and informal norms evolve together during energy projects by tracing two intertwined pathways of justice assessment. In their account, the first pathway runs through official channels, such as impact studies, regulatory consultations, and planning processes, where questions of who pays and who benefits are converted into specific targets, such as emissions reductions or caps on household expenses. The second pathway takes place in the public sphere, where NGOs, neighborhood meetings, and media debates bring forward concerns about who is heard and how decisions are reached.

Critically, Pesch et al. (2017) introduce two dynamic mechanisms linking these trajectories:

- **Overflowing:** where informal forums expose gaps or biases in formal assessments (for example, when community groups point out that renters were excluded from consultation).
- **Backflowing:** where formal institutions adapt by codifying those concerns into amended rules or impact-assessment requirements.

Applied to municipal heating transitions, this dual-trajectory perspective reveals that formal rules like the HTV and informal norms such as the expectations of the public are not static but mutually reinforcing. Informal contact with different stakeholders' "overflows" by surfacing equity and inclusion issues that engineers' cost–benefit models overlook; municipalities then "backflow" these insights by revising their official plans to require, for instance, mandatory equity statements and renter representation on steering committees.

By embedding Pesch et al.'s (2017) justice-assessment trajectories within the enforcement-based definitions of formal and informal institutions, a processual lens on how community-driven norms become institutionalized is gained. This enriches North's, Ostrom's, and Hodgson's static typologies with a dynamic account of institutional change, essential for analyzing the adaptive, justice-oriented governance of complex heating transitions.

2.1.5 Definition of formal and informal institutions

Building on North, Ostrom, Hodgson, and the trajectories concept introduced by Pesch et al, this thesis defines institutions in both their structural and processual dimensions:

- **Formal institutions:** consist of codified rule-systems enforceable through legal or administrative authorities like laws, regulations, contracts, policy frameworks, and official procedures. Beyond their static form, these rules are continuously shaped by a formal assessment pathway of impact studies, regulatory consultations, and planning reviews in which distributive justice claims (who bears costs, who receives benefits) are translated into binding targets and thresholds.
- **Informal institutions:** consist of socially shared norms, practices, and expectations upheld by peer pressure, trust, or reputation. Although these norms remain stable, they also evolve through informal channels, such as NGO campaigns, neighborhood meetings, and media coverage, where questions of recognition justice (whose voices are heard) and procedural justice (how decisions are made) surface and feed back into the system.

This definition treats enforceability as the central distinction between the two types of institutions. Formal institutions consist of rules, regulations, contracts, and procedures that can be upheld in a court of law or through administrative bodies. Hodgson (2025) argues that legal enforceability, rather than mere written form, is the hallmark of a formal institution. This means that an unwritten practice backed by repeatedly enforced precedent may function as a formal rule, while a written guideline without any mechanism for legal recourse remains informal in effect. Ostrom's (2009) research on common-pool resources illustrates this, by showing how locally developed norms, though not codified in law, can achieve enforceability within a community through mutual monitoring and social sanctioning, effectively operating with the strength of formal institutions.

Informal institutions are patterns of behavior, shared expectations, and cultural norms maintained through peer pressure, reputation, or community enforcement. Such norms may originate in repeated social interactions or be transmitted through tradition. Because these practices lack formal legal backing, they can change rapidly when public sentiment shifts or when new social pressures arise. North's (1990) original conception of institutions as "the rules of the game" highlights their role in structuring behavior, but his emphasis on slow, path-dependent change underestimates the capacity of informal norms to adapt swiftly in response to collective mobilization or crisis.

As defined above Pesch et al. (2017) expand this understanding by showing how justice concerns flow between formal procedures and informal norms in two linked assessment pathways. In official planning processes, questions of who bears costs and who receives benefits are translated into measurable targets, such as emission-reduction goals or limits on household energy expenses. Simultaneously, community forums, NGO campaigns, and public assemblies surface issues of whose perspectives count and how decisions are made. When participants in these informal settings identify blind spots, those critiques can be submitted to regulatory bodies, triggering revisions to formal rules. In turn, amended regulations reshape public expectations and negotiation practices. This cycle of informal insights "overflowing" into formal processes and formal rules "backflowing" into everyday norms provides a dynamic account of how institutional change occurs in municipal heating transitions, capturing both the structural rigidity of enforceable rules and the adaptive flexibility of social practices.

2.1.6 Institutional context as a foundation

Institutions provide the foundational context for public policy and governance, shaping how actors interact and what actions are deemed acceptable. They establish incentives and constraints that guide the decision-making of individuals and organizations within a society. In the context of public administration, institutions define the "rules of the game" that government agencies, non-governmental organizations (NGOs), and citizens must navigate. These institutional factors are crucial in determining the possibilities and limits of collaboration: they can empower or hinder partnerships, affect resource distribution, and dictate the accountability mechanisms in place. Institutions create the environment in which municipalities and NGOs operate, thereby laying the groundwork for the collaborative dynamics discussed in the next section.

2.2 NGO–municipality collaboration

Collaboration between non-governmental organizations (NGOs) and municipal governments is a key factor of effective, inclusive municipal heating transitions. While it is already widely known that Dutch municipalities play an important role (Devenish and Lockwood 2024; Herreras Martínez et al. 2022), NGOs and other organizations can also be of great importance. The following sections synthesizes eight foundational contributions about theoretical frameworks, functional roles, success factors, and accountability mechanisms, to guide the analysis of NGO–municipality partnerships.

2.2.1 Theoretical frameworks for collaborative governance

Ansell and Gash (2008) provide a process-oriented model of collaborative governance, arguing that successful partnerships emerge from the dynamic interplay of five core elements:

- **System Context:** this encompasses the broader political, legal, and social environment in which collaboration takes place.
- **Institutional Design:** institutional design refers to the specific rules and structures that govern how stakeholders interact. Ansell and Gash highlight elements such as how participants are invited, how meeting agendas are set, and what decision-making protocols apply.
- **Leadership:** effective collaboration requires facilitative leadership through individuals or bodies that act as neutral convenors, manage conflict, and maintain momentum. Leaders in this model do not dictate outcomes, but rather ensure balanced participation, surface power imbalances, and keep discussions focused on shared objectives. In practice, this could be an NGO liaison who has credibility with both engineers and residents, or a municipal climate officer trained in consensus-building techniques.

- **Facilitative Processes:** beyond leadership, the model emphasizes ongoing processes such as joint fact-finding, iterative agenda setting, and structured deliberation. These activities build mutual understanding of technical data (e.g., heat demand modeling), surface value conflicts (e.g., affordability vs. sustainability), and create shared ownership over solutions. Regular "learning labs" or scenario workshops exemplify these processes in heating transition collaborations.
- **Early "Small Wins":** delivering tangible, visible successes early in the collaboration reinforces trust and demonstrates the partnership's effectiveness. These small wins also serve as proofs-of-concept that can unlock further funding and participation.

Ansell and Gash (2008) stress that neutral convenors (who can be either an NGO or a specially appointed municipal facilitator) and transparent ground rules are indispensable for these elements to cohere. Without an agreed process and open information sharing, dominant actors can steer outcomes unilaterally, eroding the trust needed for long-term engagement (Ansell & Gash, 2008).

Building on this, Emerson et. al. (2012) reconceptualize the model into three interlinked components:

- **Drivers:** catalysts such as regulatory deadlines for delivering a HTV, high energy prices, or community pressure following a neighborhood heat loss incident.
- **Capacities:** the partnership's resources and capabilities including technical expertise of municipal engineers, facilitation skills of NGOs, data-analysis tools for heat mapping, and the social networks needed for outreach.
- **Actions:** concrete collaborative behaviors like jointly commissioning feasibility studies, co-designing outreach materials, and establishing shared monitoring dashboards.

Collaborative performance, measured in terms of timely pilot implementation, cost-effectiveness, and stakeholder satisfaction, emerges when drivers motivate action, capacities are marshaled effectively, and actions are sustained in a supportive institutional context (Emerson et al. 2012). Together, these frameworks make clear that municipal heating transitions, characterized by technical complexity, diverse stakeholders, and contested values, must be anchored in well-designed, continuously nurtured collaborative processes.

Building further on these frameworks, the collaboration between Buurkracht and the municipality exemplifies how the five elements and the drivers–capacities–actions cycle plays out in practice:

- **System context:** in Buurkracht's partnership, the national requirement to draft a HTV provides a clear policy mandate that acts as a driver. (Emerson et al. 2012). At the same time, municipal budgetary timelines and neighborhood power dynamics shape the system context within which both parties must operate (Ansell and Gash 2008).
- **Institutional Design:** Buurkracht and the municipality co-developed a formal Terms of Reference that specifies equal representation on a joint steering committee, meeting frequency, decision-making rules, and conflict-resolution protocols. This transparent design reflects Ansell and Gash's (2008) prescription for clear ground rules to sustain engagement.
- **Leadership:** Buurkracht's project leaders acts as the neutral convenor, chairing workshops and mediating between municipal workers and resident groups. Their role embodies the facilitative leadership Ansell and Gash (2008) deem critical for balancing power and keeping discussions focused on shared goals.

- **Facilitative Processes:** together, Buurkracht and municipal staff run monthly "heat transition labs," combining technical presentations on system modelling with participatory mapping exercises. These activities represent the joint fact-finding and iterative deliberation that build mutual understanding and collective ownership (Ansell and Gash 2008)
- **Early "Small Wins":** the partnership prioritized a pilot retrofit of heat pumps in one housing block completed within three months to deliver an early tangible success. This small win generated positive media coverage and unlocked additional municipal funding, illustrating how visible results reinforce trust and momentum (Ansell and Gash 2008).

Throughout this process, drivers (policy deadlines, community pressure), capacities (Buurkracht's facilitation expertise, municipal technical staff, and data-analysis tools), and actions (co-planning workshops, shared monitoring) interact continuously to produce collaborative performance in line with Emerson et al.'s (2012) framework. By intentionally designing their institutional arrangements and sustaining facilitative processes, Buurkracht and the municipality have created a resilient partnership model capable of navigating the technical complexity and social contestation inherent in municipal heating transitions.

2.2.2 Case study examples

There have already been a lot of different studies done that look at the NGO-municipality connection. Table 1 summarizes key empirical case studies of municipality–NGO (or NGO-like intermediary) collaborations in heating and broader energy transitions. Each study highlights the geographic context, primary actors and interventions, and the mechanisms through which civic actors and local authorities co-designed, governed, and implemented low-carbon heating initiatives. This comparative overview will support the analysis of Buurkracht's partnership model by situating it alongside similar examples from Europe and North America.

Study & year	Context	Actors & interventions	Key lessons
Jordan et al., (2015)	Cross-scale examples from California and the EU	National regulators, regional bodies, city governments, civil-society organizations forming polycentric governance systems.	Overlapping districts and NGO-led city networks can drive innovation and resilience
Späth & Rohracher (2011)	Freiburg (DE.) and Graz (AT.)	Municipal climate offices, local research NGOs, citizen groups co-design solar district heating and passive-house neighborhoods.	Research institutes acting as neutral convenors and knowledge brokers facilitate co-governance
Bulkeley & Kern (2006)	Six cities in Germany and the U.K.	City sustainability teams, environmental NGOs, utilities, universities collaborating on heat-pump pilots, building retrofits, CHP networks.	Formal networks and co-funding schemes institutionalize long-term municipal–NGO partnerships
Boehnke et al. (2019)	Thirteen small- and medium-sized Dutch municipalities	City climate officers, business associations, grassroots NGOs developing insulation drives, heat-pump trials, resident financing models.	Different collaboration modes (directive partnership vs. network facilitation) link directly to measurable emission savings
Hoppe et. Al., (2016)	Four European small-medium cities	Municipal units, citizen councils, third-sector facilitators mapping instruments and stakeholder roles.	Analytical grid clarifies where NGOs fit within governance arrangements
Betsill & Bulkeley(2006)	Pilot projects in Toronto (CA.), Seattle (U.S.), London (U.K.)	City governments, NGOs, university centers testing low-carbon heating technologies, data platforms, and public engagement tools.	Experimental "living labs" supported by NGOs can inform and reshape formal municipal strategies

Loorbach, Van Der Brugge & Taanman (2008)	Four Dutch transition arenas	Transition teams combining provincial governments, TNO, intermediary NGOs in multi-stakeholder back casting workshops.	Structured, NGO-facilitated for an effectively channel bottom-up insights into regional energy visions
Warbroek & Hoppe (2018a)	Provinces of Overijssel and Friesland	Regional NGOs (e.g., EnergieSamen), municipal planners, local energy cooperatives co-steering biomass, heat network, solar district pilots	Intermediaries perform trust-building, resource brokering, and network facilitation roles critical to successful collaboration
van der Schoor & Scholtens (2015)	Local community initiatives in the Netherlands	Community energy cooperatives, municipal governments, and intermediary organizations developing decentralized energy systems.	Grassroots initiatives succeed when they align shared visions with inclusive participation and adaptive governance structures.

Table 1. Overview of case studies

The comparative cases in the table display the collaborative governance principles outlined by Ansell and Gash (2008) and Emerson et al. (2012). Across diverse contexts NGO partnerships share the same structural features and dynamic process:

- **System Context & Drivers:** every case leveraged a clear policy mandate or funding deadline as a catalyst, whether it was an EU directive, a municipal heat-plan deadline, or a regional climate goal.
- **Institutional Design & Capacities:** formal agreements routinely delineated roles and resource commitments, while NGOs or intermediary bodies contributed facilitation skills, technical knowledge, and community connections.
- **Leadership & Facilitative Processes:** neutral convenors, often housed in NGO-style research institutes or community energy cooperatives chaired multi-actor forums, guided joint fact-finding workshops, and maintained open information flows.
- **Early Small Wins & Actions:** pilot projects (solar-assisted blocks, boiler retrofits, waste-heat trials) delivered early visible benefits that reinforced trust and unlocked further collaboration.

In each study, the interplay between formal structures and informal norms proved essential for scalable, equitable heating transitions. By situating Buurkracht alongside these exemplars, the literature review highlights both the common building blocks of effective partnerships and the specific configurations that support successful outcomes in municipal heating governance.

2.2.3 Intermediaries

As shown in Table 1, many successful NGO–municipality collaborations in heating transitions rely on third-party actors that help mediate, broker, and align interests among stakeholders. These actors are often referred to as intermediaries and they do not fit perfectly into formal governance structures, but play indispensable roles in bridging institutional gaps (Warbroek et al. 2018b). Broers et al. (2023) emphasize that sustainable innovation processes, such as the deployment of building-integrated photovoltaics (BIPV), often depend on a dynamic "ecology" of intermediaries that collectively support actors through the different stages of adoption. Their study of BIPV initiatives in the Netherlands identifies key challenges such as information asymmetry, fragmented responsibilities, and coordination barriers. Rather than relying on a single coordinating entity, successful initiatives often feature overlapping intermediary functions provided by technical experts, municipal departments, neighborhood groups, and NGOs. These intermediaries perform translation (e.g., converting technical jargon into accessible formats), partnership brokering (e.g., linking residents with suppliers or

financiers), and facilitation (e.g., running scenario workshops or community consultations). Such intermediation is inherently multilevel and nonlinear, with feedback loops between actors and stages of innovation.

These insights reinforce the conceptual models discussed in Sections 2.3.4.1 and 2.3.4.2: intermediaries like Buurkracht embody core elements of collaborative governance by building trust, structuring inclusive processes, and enabling small wins. Broers et al.'s (2023) contribution provides a theoretical explanation for how and why such roles are critical to scaling local energy innovations. In the context of Buurkracht, their facilitation and brokering functions can be seen as part of a broader ecology of intermediation that complements formal municipal authority. Viewing Buurkracht not merely as a stakeholder but as a dynamic intermediary helps clarify its role in translating strategic policy drivers into locally embedded action. However, to further look into this a more practical stance is needed, which also includes implementing and its relation to collaborative governance.

2.2.4 Implementation barriers and speed and stage of implementation

To analyze how collaboration affects practical outcomes in the heating transition, this thesis uses three related concepts: **speed of implementation**, **stage of implementation** and **implementation barriers**. These concepts are not formal definitions in the literature but are derived from common themes in collaborative governance.

Speed of implementation refers to the **tempo** at which early steps occur. Collaborative governance studies show that tempo is shaped by interaction quality, trust building, communication and access to decision makers. These conditions influence whether initial activities progress quickly or move slowly through coordination steps (Ansell and Gash, 2008; Emerson and Nabatchi, 2015).

Stage of implementation refers to **how far** a process has progressed at a specific moment. Collaborative governance literature describes implementation as a dynamic sequence in which actors build shared motivation, organize joint action and adjust their approach over time. These phases provide a basis for understanding variation in implementation positions across cases (Emerson and Nabatchi, 2015).

Implementation barriers refer to the **factors that constrain or slow down** progress. Research highlights how front line actors work under resource limits, interpret rules in practice and develop coping strategies that shape real outcomes. These dynamics influence both the tempo of early actions and the ability to advance from one phase to the next (Lipsky, 2010).

Together, these concepts provide an analytical structure to assess how different collaborative approaches between Buurkracht, and the municipalities relate to observable differences in implementation progress. By positioning intermediaries as a structural and functional necessity, the framework of collaborative governance enhances the analytical lens through which Buurkracht's impact is evaluated in the empirical chapters to follow. While such frameworks explain the structural function of intermediaries, they also invite closer attention to how these actors operate at ground or street level by shaping relationships, navigating local dynamics, and interpreting policy in real-time.

2.3 Street-level bureaucracy and Buurkracht's role

Street-level bureaucracy research demonstrates that front-line actors exercise significant discretion in translating policy into practice, often determining real-world outcomes through everyday decisions (Ehrlich and Cash 1999; Lipsky 2010). In the energy transition context, Buurkracht embodies this role by entering neighborhoods not as distant experts, but as trusted facilitators. By first addressing

immediate needs that are at play within a specific neighborhood, Buurkracht builds the relational credibility necessary for later conversations about the heating transition.

2.3.1 Discretion and trust-building

Discretion at the street level emerges whenever broad policy mandates meet local complexities like scarce resources, diverse needs, and unexpected obstacles. Lipsky (2010) argued that this discretion is unavoidable: front-line workers must interpret ambiguous rules and decide how to allocate limited time and materials. In Buurkracht's practice, facilitators confront this challenge daily. Rather than leading with technical blueprints for district heating which can seem abstract or even threatening they begin by tackling the most tangible problems: a leaking radiator, confusion over energy bills, or difficulty accessing insulation subsidies.

Resolving such immediate concerns serves two critical functions. First, it generates rapid, concrete "small wins" (Ansell & Gash, 2008), demonstrating to residents that Buurkracht can deliver real benefits. These early victories act as signaling devices: they show that facilitators are responsive and capable, earning the informal endorsement of community leaders and informal networks. Second, by prioritizing these urgent needs, facilitators build relational trust, the social capital that Lipsky (2010) saw as essential for effective discretionary practice.

Trust, then, is not just a helpful byproduct but a strategic input in collaborative settings. Ansell and Gash (2008) emphasize that trust functions as both a starting condition and an emergent property of the collaboration process. When initial trust is low, partnerships must invest heavily in confidence-building measures, like small wins, transparent decision-making, and inclusive communication, to establish the basis for meaningful collaboration. Their model further stresses power-sharing: unless all actors have genuine influence, particularly those historically marginalized, trust is unlikely to take root. Huxham & Vangen (2004) reinforce this through the concept of collaborative inertia: when trust is missing or underdeveloped, processes slow down significantly, even when incentives and resources are available. Onencan et. al. (2024) found comparable results for district heating in the Netherlands, highlighting the importance of comprehension of citizens by providing information in order to build trust.

This also holds true in Buurkracht's work. Facilitators begin by spending months building relationships with residents, proving reliability, and addressing everyday concerns. This patient groundwork prevents inertia and paves the way for collaborative planning. For example, resolving a recurring subsidy access issue not only helps residents immediately but also shows Buurkracht's value as an ally, making it easier to introduce participatory mapping or co-design sessions later. In this way, Buurkracht avoids being seen as another top-down implementer and instead becomes embedded in the neighborhood as a credible and trusted partner.

Moreover, the process of selecting which issues to address reveals how discretion is shaped by both formal and informal rules. Formally, Buurkracht operates under a municipal mandate to facilitate heating transitions; informally, facilitators learn over time which neighborhood concerns are most pressing and which local actors hold influence. This dual awareness of legal backing on the one hand and community norms on the other, guides facilitators in making choices that both comply with institutional objectives and resonate with residents lived experiences.

In Lipsky's (2010) terms, these acts of prioritization are not merely administrative; they are political and choices that redefine policy in practice. Every action whether an energy related consultation or an everyday local problem, becomes an opportunity to demonstrate Buurkracht's legitimacy, thereby expanding the space for later, more technical interventions. Over successive encounters, discretion exercised in these small, everyday decisions accumulates into a reservoir of trust, positioning Buurkracht as both co-designer and implementer of the eventual district-heating strategy.

2.3.2 Navigating dual voices: state-agent and coping frames
Maynard-Moody and Musheno (2022) identify two narrative frames that street-level bureaucrats adopt when interacting with clients. The state-agent voice emphasizes adherence to rules, mandates, and procedural correctness; the coping voice centers on pragmatic problem-solving and empathetic responsiveness. Buurkracht facilitators skillfully alternate between these frames to build trust and advance heating-transition objectives.

In early meetings, facilitators prioritize the coping voice to demonstrate genuine concern for residents lived experiences. A typical interaction might begin with a facilitator sitting down at a kitchen table to hear about a tenant's surprise energy bill or a landlord's struggle to find dependable insulation contractors. Rather than immediately presenting policy slide decks, the facilitator listens, validates frustrations, and offers concrete assistance, such as contacting the energy supplier on the resident's behalf or sharing contact details for vetted installers. These actions align with the coping frame by addressing tangible needs, signaling that Buurkracht is not merely an external enforcer but an ally in navigating daily hardships.

Once facilitators have established rapport, they introduce the state-agent voice to convey the broader context and formal requirements of the heating transition. For instance, after resolving a billing dispute, the facilitator might explain how the HTV sets district-heating targets and outline upcoming public consultations mandated by municipal regulation. This shift anchors residents' emerging interest in concrete policy structures, turning goodwill into informed engagement.

Alternating between voices prevents a one-dimensional relationship. If facilitators spoke only in the state-agent frame, residents could perceive them as remote bureaucrats imposing top-down mandates, fueling resistance. Conversely, sticking solely to the coping frame would limit discussions to isolated fixes, missing opportunities to co-design systemic solutions. By consciously swinging the narrative pendulum, first addressing urgent personal problems, then situating those solutions within the official transition plan, facilitators create a learning environment where technical complexity becomes accessible and actionable.

2.3.4 Implementation perspectives: top-down meets bottom-up
Understanding how policy intentions translate into real-world heating transitions requires attention both to centrally designed frameworks and to the discretionary actions of front-line actors. Hill and Hupe (2002) identify two complementary research traditions: top-down and bottom-up, that shed light on this process and can be fruitfully combined when examining municipal energy projects.

The top-down perspective treats implementation as a hierarchical cascade of clearly defined objectives, resources, and sanctions. In the context of a HTV, this means that municipal councils set precise targets (e.g., CO_2 reductions, tariff caps) and allocate budgets to enforce compliance. Success hinges on the clarity of those goals, the soundness of the causal mechanisms (for instance, linking heat-

pump subsidies to emissions cut), and the existence of well-structured implementation units tasked with monitoring progress (Hill & Hupe, 2002).

By contrast, the bottom-up tradition starts at the street level, where frontline facilitators like Buurkracht staff interpret and adapt policy in light of local norms, relationships, and resource constraints (Lipsky, 1980). Discretion and coping strategies, ranging from prioritizing boiler repairs to co-creating heat-demand maps that drive outcomes more than formal directives. This lens highlights how residents, through their interactions with facilitators, actively shape the service delivery process and co-produce policy in practice.

Hill and Hupe (2002) argue for an interactive model in which top-down structures and bottom-up adaptations continuously inform one another. For municipal heating transitions, this means that formal mandates (e.g., equity impact assessments) create the enabling environment for Buurkracht's street-level work, while insights from community workshops—such as emerging equity concerns—are fed back into policy revisions. This two-way flow supports the "overflowing" and "backflowing" dynamics of justice assessment (Pesch et al., 2017) and highlights that durable institutional change arises from the interplay of design and discretion. By integrating Hill and Hupe's implementation frameworks with the collaborative and street-level perspectives discussed earlier, the literature review establishes a comprehensive foundation for analyzing how municipal heating visions are negotiated, enacted, and refined across governance scales and levels. However, traversing these levels requires additional insights into how these levels function alongside the different values and learning processes within the system.

2.4 Institutional dynamics: governance levels, values, and learning

Institutional change in municipal heating transitions is shaped not only by the design of governance structures, but also by the values, learning processes, and stakeholder negotiations that unfold within them. This section brings together two complementary perspectives on institutional dynamics. The first, drawn from Hill and Hupe (2006) highlights how governance processes operate across multiple interrelated levels, ranging from formal policy arenas to street-level practices. The second, developed by Milchram et al. (2019) emphasizes how changing values and social learning drive the adaptation and transformation of institutional arrangements over time.

2.4.1 Multi-level governance

Hill and Hupe (2006) argue that the classic "stages" approach to policymaking fails to capture the nested complexity of real-world governance processes. They propose a "multiple level governance" framework, influenced by Ostrom's Institutional Analysis and Development (IAD) paradigm, which recognizes that policy decisions are interrelated across different levels of governance rather than unfolding in a neat sequence. This framework delineates multiple layers of action. For example, the broad policy-setting arena, the institutional or organizational level of rules, and the on-the-ground operational level, each associated with distinct governance functions.

By examining how these layers interact, Hill and Hupe (2006) shed light on issues of accountability and the interplay between central directives and local autonomy in public programs. Applying a multiple governance lens to energy transitions suggests that municipal heating initiatives must be viewed as embedded in a wider governance ecosystem: local collaborative efforts (such as those by municipalities and community groups) are intertwined with formal policies and institutional constraints at higher levels. This perspective helps explain why implementation outcomes depend not just on linear policy

instructions, but on the alignment (or misalignment) of actions and decisions across governance levels. The multiple governance perspective provides a more realistic analytic lens for complex multi-actor initiatives, which is especially important to the multi-level challenges of energy transitions.

2.4.2 Values and social learning

While multi-level governance frameworks help explain the structural dynamics of institutional arrangements, they often underemphasize the normative tensions and social learning processes that accompany transitions. Milchram et al. (2019) address this gap by developing a framework to explain how shifts in core values. Normative principles such as affordability, security of supply, and sustainability can drive transformations in the rules and norms governing energy systems. They extend Ostrom's IAD framework by integrating the concept of social learning, thereby highlighting dynamic feedback between value-driven public debates and institutional evolution.

In this view, conflicts or "value controversies" (for instance, debates over sustainability versus affordability) can trigger collective learning processes that eventually reshape formal regulations and organizational practices. The framework offers a way to map how values are embedded in existing infrastructures and policies, and how changes in those values, emerging through stakeholder interaction and reflection, lead to concrete shifts in governance arrangements. Notably, this value-focused approach provides a means to trace how institutional arrangements evolve over time and compare such change dynamics across different contexts.

For the municipal heating transition, this perspective implies that collaboration is not just a technical or economic endeavor but also an ongoing social learning journey. Stakeholders' differing priorities such as environmental goals, cost concerns, or community solidarity, must be negotiated, and through that process, local institutions (e.g., rules, plans, partnership models) can evolve. Incorporating a value-driven lens thus complements structural governance analyses by explaining how normative factors and mutual learning shape the trajectory of change.

2.5 Conclusion of the literature review

The literature review has highlighted several theoretical perspectives that together form the analytical framework for this study. Each strand of literature offers a lens for examining the variation in collaboration between Buurkracht and the four Dutch municipalities in the heating transition. Key insights from these bodies of literature are summarized below:

Institutional theory: institutions constitute the "rules of the game" and are comprised of both formal legally enforceable rules and informal socially upheld norms that together guide municipal heating transitions (North, 1990; Ostrom, 2009; Hodgson, 2025). Formal rules such as laws, regulations, and contracts backed by government authority provide a stable framework but can be slow to adapt on their own (North, 1990). In contrast, informal norms like customs, practices, and community expectations are enforced through trust and social pressure and can be more responsive to changing local conditions and justice concerns (Ostrom, 2009; Hodgson, 2025). Crucially, informal debates in public forums often expose gaps in formal planning ("overflowing"), prompting revisions to official rules ("backflowing") that then reshape community norms (Pesch et al., 2017). This dynamic interplay ensures that enforceable regulations and evolving social practices coevolve to support more equitable and adaptive governance in complex energy transitions. Trajectories thereby influence collaboration with Buurkracht in each case (Pesch et al., 2017).

NGO–municipality collaboration: collaborative governance literature explains how public and private actors work jointly in collective decision-making processes (Ansell and Gash, 2008; Emerson et al., 2012). It highlights that effective collaboration requires inclusive forums, shared decision power, and consensus-oriented processes (Ansell and Gash, 2008). Within this, Buurkracht can be seen as an intermediary organization, a bridging actor that mediates between the community and municipal government (Warbroek and Hoppe, 2018a; Broers et al., 2023). Such intermediaries facilitate communication and alignment of interests among stakeholders and support small wins and trust-building (Ansell and Gash, 2008; Broers et al., 2023). This theme provides concepts to analyze Buurkracht's role and the quality of its partnership with each municipality

Implementation: early steps of implementation require coordination across units, clear responsibilities and predictable follow up. When these conditions are weak, delays and barriers appear. This aligns with collaborative governance research, which stresses that trust building, shared problem solving and stable interaction influence whether early actions advance or remain fragmented (Ansell and Gash, 2008; Emerson and Nabatchi, 2015). Street level bureaucracy shows that frontline actors shape progress through their interpretations and coping strategies under resource limits (Lipsky, 2010). This perspective supports the focus on speed, stage and barriers rather than on outputs or long term outcomes, because the cases in this study are in early phases of the heating transition.

Street-level bureaucracy: the street-level bureaucracy framework shifts attention to the front-line implementers in the municipalities. These are the officials and civil servants who directly interact with citizens in carrying out the heating transition policies (Lipsky, 2010). These street-level bureaucrats wield substantial discretion in how they apply policy on a case-by-case basis, often causing a gap between policy as written and policy as implemented. They must manage heavy workloads and ambiguous goals, leading them to develop coping mechanisms to handle daily pressures (Lipsky, 2010). Critically, trust plays a role in their behavior, being both a starting point and an end product (Ansell and Gash, 2008; Lipsky, 2010). This literature thus contributes an understanding of how on-the-ground discretion, front-line relationships, and personal coping strategies may cause the Buurkracht–municipality collaboration to play out differently in each city.

Multi-level governance and social learning: finally, the broader context for these cases is the multi-level governance of the climate and energy transition. Multi-level governance (MLG) refers to coordinated action across different levels of government (national, regional, local) together with non-governmental stakeholders to implement policy (Hill and Hupe, 2006). The Dutch heating transition is guided by national objectives and funding, but executed locally, so municipal collaboration with intermediaries like Buurkracht is influenced by policies and incentives from higher levels, as well as by horizontal sharing of ideas between cities (Hill and Hupe, 2006). The concept of social learning further enriches the framework by recognizing that actors learn through collaboration. Social (or collaborative) learning is a process where groups jointly reflect and adapt their strategies to improve a common situation (Milchram et al., 2019; Emerson and Nabatchi, 2015). This perspective suggests that each Buurkracht–municipality partnership can evolve over time as partners learn from experience (and from each other across municipalities), leading to adjustments in how they collaborate. Attention to multi-level context and learning processes ensures the study considers external influences on each local collaboration and the capacity for change (Hill and Hupe, 2006; Milchram et al., 2019).

Table 2 below summarizes how each literature theme contributes to the study's analytical framework and guides the examination of collaboration variation:

Literature strand	Function
Institutional theory	Frames the **context** of each case: how formal policies and informal norms (shaped by historical trajectories) enable or constrain the collaboration. It alerts us to path-dependent differences between municipalities.
NGO–municipality collaboration	Provides a **collaborative governance lens**: defines what genuine co-production looks like and what roles each actor plays. The concept of **intermediary roles** is used to evaluate Buurkracht's function in bridging communities and government, and whether the partnership approach aligns with best practices for inclusive, power-sharing collaboration.
Street-level bureaucracy	Focuses on **implementation behavior**: how municipal front-line officials exercise discretion and the implications for collaboration. It guides analysis of whether street-level workers embrace the NGO's involvement, how they build (or lack) trust with citizens, and what coping strategies might influence the delivery of heating initiatives (potentially explaining differences in on-the-ground execution between cases).
Implementation	It shows how **collaboration quality shapes early progress**. Trust, clear roles and stable interaction support smoother implementation, while fragmented coordination and capacity limits create delays. Helps explain why some collaborations advance faster or reach further stages than others.
Case study methodology & theorization	Guides the **research design and analysis**: using a multiple-case study approach to systematically compare the four municipal cases. This enables both rich **description** of each case and **explanation** through cross-case pattern matching. The theoretical replication logic (expecting cases to differ for specifiable reasons) helps in formulating why certain conditions (e.g., institutional setup, leadership, community engagement) correspond to particular collaboration outcomes.
Multi-level governance & social learning	Situates the analysis in the **wider governance system** and dynamic learning context. MLG reminds us that each local collaboration is nested in higher-level frameworks and inter-municipal networks, which may account for some variation (e.g., differences in provincial support or national policy incentives). The social learning aspect means the study will look for evidence of **adaptive changes** or mutual learning over time within and between the cases – for instance, whether later collaborations improved by learning from earlier ones, or if knowledge-sharing occurs between the four municipalities via Buurkracht.

Table 2. Literature review analytical framework

2.5.1 Main research question

Bringing these perspectives together, the study constructs an analytical framework to examine how and why collaboration differs across the four municipal cases. Accordingly, the main research question guiding this thesis is:

"What are the key similarities and differences in the collaboration between Buurkracht and the four municipalities (Boxtel en Sint Michielsgestel, Leeuwarden, Rotterdam, and Zaanstad) in implementing heating transition plans, and why do these variations exist?"

This question emphasizes that the focus is on the collaborative process, meaning how the municipality and Buurkracht work together, rather than on the technical aspects of heating solutions. In other words, the investigation is concerned with partnership dynamics, governance, and implementation behavior, not the engineering details of the heat transition. The aim is twofold: descriptive, by mapping out the patterns of collaboration and identifying commonalities and differences across Boxtel, Leeuwarden, Rotterdam, and Zaanstad; and explanatory, by uncovering the underlying reasons for those patterns. By answering this question, the research seeks to reveal not only what variations exist in these four collaborations, but also why they exist, providing insights into the factors that facilitate or hinder effective collaboration in the municipal heating transition.

2.5.2 Formulating sub questions

To operationalize the main research question into analyzable components, four sub questions have been constructed. Each sub question targets a distinct dimension of the Buurkracht–municipality

collaboration, drawing directly on insights from the literature review. Below, the sub questions are listed, followed by a concise justification for each based on relevant theoretical themes.

Sub questions

1. Which formal rules, regulations, plans and policies shape the collaboration between Buurkracht and the municipalities?

2. Which informal rules and norms shape the collaboration between Buurkracht and the municipalities?

3. How does the spatial, social, political and economic background of each municipality shape the collaboration between Buurkracht and the municipalities?

4. How do variations in collaborative approaches between Buurkracht and each municipality affect the speed and stage of heating transition implementation, and what barriers to implementation exist?

2.5.2.1 Sub-question 1: formal institution
Formal rules and regulations establish the official framework within which Buurkracht, and municipal actors must operate (North, 1990). Institutional theory highlights that codified policies, statutes, and organizational procedures determine roles, responsibilities, and resource flows (Hodgson, 2025; Ostrom, 2009). In the context of the Dutch heating transition, national legislation (e.g., the requirement for a Heat Transition Vision by 2021) and municipal heat strategies define the mandate for collaboration (Ministerie van Volkshuisvesting, 2024; Ministerie van Algemene Zaken, 2024). By asking which formal rules and plans shape the partnership, Sub-question 1 connects directly to the literature on formal institutional constraints and enablers (North, 1990; Hodgson, 2025) as well as multi-level governance (Hill & Hupe, 2006). Understanding how official policies and regulatory frameworks affect Buurkracht's work is therefore essential for analyzing how collaboration is structured and what resources or obligations drive it.

2.5.2.2 Sub-question 2: informal institutions
Where Sub-question 1 focuses on written rules, Sub-question 2 focuses on unwritten norms and practices that govern daily interactions (North, 1990; Hodgson, 2025). The literature emphasizes that informal institutions, such as trust, shared expectations, and social networks often determine whether formal agreements succeed or fail in practice (Ostrom, 2009; Pesch et al., 2017). Collaborative governance research also stresses the importance of trust and mutual understanding for partnership success (Ansell & Gash, 2008; Emerson & Nabatchi, 2015). By investigating which informal rules and norms shape the partnership, this sub question enables examination of the "hidden" social dynamics— trust-building steps, power-sharing practices, and communication routines, which influence the quality of collaboration beyond formal contracts (Lipsky, 2010). This directly responds to calls in the literature to account for informal determinants of collaborative success (Hodgson, 2025; Ansell & Gash, 2008).

2.5.2.3 Sub-question 3: Local contextual variation
Comparative case-study and transition literature highlights that local context more specifically spatial, economic, political, and social, profoundly shapes how innovations are adopted and how governance unfolds (Hoppe et al., 2015; Milchram et al., 2019). Sub-question 3 looks into how each municipality's unique background conditions influence its collaboration with Buurkracht. This aligns with multi-level governance theory, which points out that local implementation is embedded within broader national frameworks but also mediated by municipality-specific capacities, stakeholder networks, and socio-economic profiles (Hill & Hupe, 2006). By exploring spatial, social, political, and economic variation

across the four cases, the research captures the context-sensitivity that the literature identifies as critical for explaining why similar policies yield different outcomes in different settings (Ostrom, 2009; Milchram et al., 2019).

2.5.2.4 Sub-question 4: collaborative approaches and implementation outcomes

Sub-question 4 examines how differences in collaboration between Buurkracht and each municipality relate to the **speed** and **stage** of implementation, and which **barriers** influence this process. The question connects collaborative governance theory to the practical delivery of the heating transition, following the idea that collaboration processes shape real implementation results (Ansell and Gash, 2008; Emerson and Nabatchi, 2015).

Collaborative governance literature shows that the way actors coordinate tasks affects implementation progress. Interaction quality, trust building, information sharing and clarity of responsibilities influence whether early steps advance or slow down (Ansell and Gash, 2008). Repeated contact and shared action help actors organize next steps, while fragmented communication or unclear roles reduce alignment and increase the chance of delays (Emerson and Nabatchi, 2015). These studies describe implementation as dependent on the working relations that develop during collaboration and the routines actors use to manage ongoing tasks (Ansell and Gash, 2008). Therefore, the collaborative approaches are key to consider.

Implementation literature explains why these factors matter. Progress depends on how formal procedures and informal practices interact in daily work (Emerson and Nabatchi, 2015). Early outputs, such as the formation of neighborhood teams or the organization of small early actions, require stable contacts, predictable routines and the ability to follow up across departments. Street level bureaucracy research shows that front line actors interpret rules and allocate effort under resource limits, and that their coping strategies shape both the tempo and direction of implementation (Lipsky, 2010). This perspective clarifies why identifying barriers is essential: capacity limits, unclear routing and the need to consult several internal units often create delays that slow or interrupt early steps (Lipsky, 2010; Emerson and Nabatchi, 2015).

To answer the question, the sub question uses two analytical ideas. **Speed of implementation** refers to the tempo at which early steps occur. Collaborative governance studies note that tempo depends on coordination structures, trust building, information flow and access to actors who can approve or support next steps (Ansell and Gash, 2008; Emerson and Nabatchi, 2015). **Stage of implementation** refers to how far a process has progressed at a specific moment. Collaborative governance literature describes implementation as a sequence of phases in which actors build shared motivation, organize joint action and refine their approach over time (Emerson and Nabatchi, 2015). A case can progress slowly but still reach a later phase if earlier work stabilizes. Another case can move quickly but remain in an early phase if contextual barriers restrict advancement. The concepts therefore capture different aspects of implementation outcomes.

Sub question 4 links these ideas to the empirical cases by examining how collaboration structures, access points, role clarity and continuity influence the tempo of early steps, the position of neighborhoods in the implementation process and the barriers actors report. This connects the earlier sub questions to the main research question by showing how collaboration shapes practical progress during the early phases of the heating transition, consistent with the broader focus in collaborative

governance literature on linking processes to outcomes (Ansell and Gash, 2008; Emerson and Nabatchi, 2015).

2.5.3 Synthesizing the sub questions and a conceptual model

Together, these four sub questions bridge the theoretical insights from institutional theory, collaborative governance, local contextual variation, and implementation in accordance with collaborative governance (North, 1990; Ansell & Gash, 2008; Hill & Hupe, 2006). They ensure that the main research question can be addressed through a systematic investigation. The conceptual model translates the main research question and the four sub-questions into a clear analytical structure. The model shows how the elements identified in the sub-questions combine to explain why collaboration between Buurkracht and the four municipalities differs.

The conceptual model shows how the four sub-questions combine to answer the main research question. It structures the analysis by linking the conditions that shape collaboration to the observable similarities and differences across the four municipalities.

The first part of the model groups sub-questions 1, 2 and 3 or formal institutions, informal institutions and contextual factors. These sub-questions examine the formal rules, informal norms and contextual conditions that define the environment in which Buurkracht and each municipality work together. Taken together, they map the institutional and contextual setting that produces variation across cases.

The second part of the model covers sub-question 4 or the collaborative approaches and implementation. This sub-question links those institutional conditions to actual implementation practice. It examines how differences in collaboration influence the speed and stage of early implementation and which barriers arise. This step shows how institutional and contextual variation translates into different collaborative approaches and different implementation trajectories.

The final part of the model connects these elements to the main research question. By comparing the results across municipalities, the model identifies the key similarities and differences in collaboration and explains why they occur. The structure clarifies how conditions identified in the sub-questions lead to observable patterns in collaboration and implementation, allowing the study to answer both the descriptive and explanatory elements of the main question.
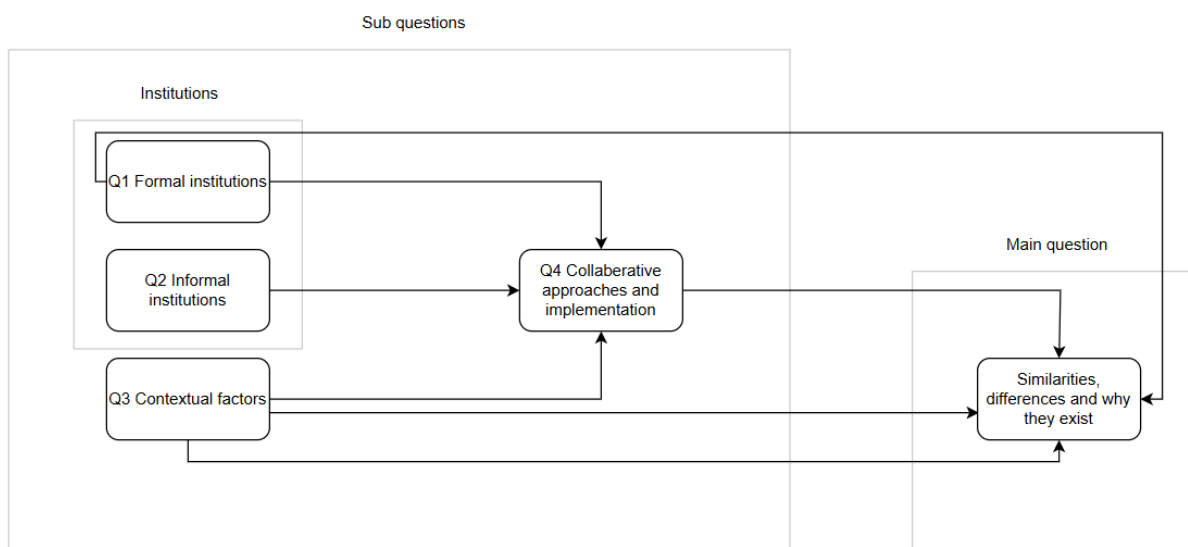
Figure 3. Conceptual model.

3 Methodology

This chapter outlines the research design and methods used to investigate the collaboration between Buurkracht and four Dutch municipalities. It details the qualitative case study approach, the selection of cases, data collection through interviews and document analysis, the procedures for conducting and analyzing interviews and texts, as well as ethical considerations and limitations. The methodology is structured to directly address the research questions, ensuring that data collection and analysis are aligned with the theoretical concepts (formal/informal institutions, local context, collaborative processes) identified in the literature review.

3.1 Research Design

This study adopts a qualitative multiple-case study design to examine how Buurkracht collaborates with four municipalities on the heat transition. A case study is "an intensive study of a single unit for the purpose of understanding a larger class of (similar) units" (Gerring 2004), which suits the aim of capturing rich, context-dependent insights into municipal energy transition strategies (Eisenhardt 1989). Each municipality functions as a "unit" or case; analyzing cases in parallel and in comparison supports contingent generalizations and broader lessons, meaning that it works through analytical rather than statistical generalization .In line with replication logic, multiple cases serve to corroborate or extend emerging theoretical insights, increasing confidence that observed patterns are not idiosyncratic to a single locale (Eisenhardt 1989; George and Bennett 2005)

The study follows an inductive, theory-building orientation, allowing themes and frameworks to emerge from the data. Consistent with best practices for building theory from cases, data collection and analysis overlap iteratively: movement back and forth between case evidence and emergent constructs enables refinement of interview guides and focal topics as insights accumulate (Eisenhardt, 1989). The approach also draws on grounded theory's constant comparison to develop open, data-driven categories. Methodological rigor and transparency are emphasized throughout, in line with qualitative standards (Elman, Gerring, and Mahoney 2020)

To balance depth with cross-case comparability, each case is bounded in time and scope, and evidence is triangulated across multiple sources (e.g., municipal documents and interviews). The classic trade-off is acknowledged: case studies excel in contextual detail and process insight but are less suited to broad statistical generalization (Gerring, 2004). These features are treated as complementary rather than as flaws, leveraging the method's strengths for exploratory, theory-building inquiry (Eisenhardt, 1989; Gerring, 2004; George & Bennett, 2005) while mitigating known limitations through careful procedure (see Sections 3.6–3.8). Methodological clarity in design and reporting is maintained to support cumulative knowledge building (Elman, Gerring, & Mahoney, 2020).

The research design aligns with Blatter and Haverland's (2012) typology of small-N explanatory approaches. Within cases, the analysis follows causal process tracing to identify mechanisms linking formal rules, informal practices, and collaboration outcomes, using iterative coding of documents and interviews. Across cases, it incorporates elements of co-variational analysis (COV) by systematically comparing common problems (e.g., affordability, citizen engagement) to assess pattern regularities under different contextual conditions. Where applicable, congruence analysis (CON) is used to gauge how observed processes and outcomes match expectations derived from the theoretical framework (e.g., IAD), thereby refining propositions.

3.2 Case Selection and Justification

The four municipalities were purposefully selected as the cases for this research because they are the pilot municipalities in which Buurkracht began implementing its neighborhood-based heating transition approach in 2024. These cities were not chosen arbitrarily; Buurkracht conducted a structured selection process to identify suitable pilot locations. Initially, a longlist of candidate municipalities was drawn up based on several criteria reflecting readiness and support for such a collaboration. This included willingness to commit long-term (including financial support) to community initiatives, having sufficient scale (e.g., enough neighborhoods to form about twelve teams), and having positive prior experiences with resident-led sustainability projects. Using these criteria, Buurkracht narrowed the list by applying additional requirements such as a strong municipal ethos of citizen participation, the presence of active Buurkracht neighborhood mentors or networks in the area, and a willingness on the part of the municipality to co-finance the project and allocate staff capacity to it. Rotterdam, Zaanstad, Boxtel, and Leeuwarden met these conditions and were selected as the pilot cases.

Each of the four selected municipalities offers a distinct context, which is an intentional advantage for the research. Rotterdam is a large metropolitan city, Zaanstad a mid-sized city in the Amsterdam metropolitan region, Leeuwarden a regional capital in the north, and Boxtel a smaller town in the south. This variety in size, regional setting, and governance context allows the study to examine how local conditions might influence the collaboration. Despite their differences, all four municipalities had demonstrated a proactive stance toward the heating transition by formulating an HTV(Heating Transition Vision) by 2021–2022 (the formal policy kickoff for the heating transition) and by agreeing to partner with Buurkracht as early adopters of a new collaborative approach. The fact that these pilot collaborations all launched around the same time (the Buurkracht–municipality project kick-off in each city took place in late February 2024) provides a common starting point, which improves the comparability of their trajectories. In summary, the case selection is justified both by practical relevance (these are the municipalities where Buurkracht's model is being rolled out) and by analytical value as they provide a diverse yet comparable set of cases to explore the research questions.

3.3 Data Collection Methods

The data were collected through two primary qualitative methods, first an analysis of municipal documents and second a series semi-structured interviews with key stakeholders. The document analysis covered each municipality's HTV official council proposals, climate action plans, and relevant meeting minutes. These texts provide concrete descriptions of local transition trajectories and stakeholder roles. The documents were sourced from public archives and municipal websites.

Document analysis is an appropriate complementary method for this study because it enables systematic examination of municipal heating transition plans and related policy documents. These texts provide insights into the formal strategies, institutional arrangements, and intended outcomes defined by each municipality. By analyzing documents alongside interviews, it is possible to compare the official policy narratives with the perspectives and experiences of stakeholders. Unlike interviews, which capture subjective accounts, documents provide a stable source of data that reflects organizational positions and policy frameworks (Bowen 2009).This supports triangulation, enhancing the credibility of the study by allowing convergence and divergence between written plans and stakeholder perspectives to be identified (Bowen 2009; Bryman 2016).

Semi-structured interviews were conducted with Buurkracht staff coordinating the collaborations and with municipal officers or council members involved in the heating transition programs. Interviews probed collaboration practices, decision-making processes, and expected outcomes; all sessions were audio-recorded and transcribed verbatim. An initial review of municipal documents informed interview design by highlighting policies, local conditions, and case-specific issues to probe, ensuring close alignment between interview prompts and each municipality's context. Semi-structured interviews are well suited for this study because they combine structure with flexibility. They allow consistent coverage of core themes across the four municipalities, while also leaving room for interviewees to elaborate on issues most relevant to their local context. This is important since the heating transition involves multiple dimensions, including governance, technical planning, and citizen engagement, which vary across municipalities. Compared with structured formats, semi-structured interviews reduce the risk of overlooking local nuances. At the same time, unlike unstructured interviews, they support comparability across cases, which is essential for a cross-case analysis framework (Bryman 2016). They also enable probing and follow-up questions that allow researchers to access unexpected themes and clarify responses (Kvale and Brinkmann 2009). Furthermore, the method is recognized as particularly effective in case study research where the aim is to balance depth with comparability across different institutional settings (Galletta and Cross 2013).

3.4 Interview Protocol and Participant Description

Semi-structured interviews were the primary method of data collection for understanding the on-the-ground collaboration processes. An interview guide was developed based on the study's sub-questions and conceptual framework. This guide ensured that all interviews covered a core set of topics while still allowing flexibility. The semi-structured format meant that predetermined questions were asked to every participant (providing consistency across cases), but interviewers could also ask follow-up questions or explore new insights introduced by the interviewee. This approach is suitable for an exploratory case study, as it allows respondents to speak freely about what they perceive as important, revealing unanticipated information while still focusing on the themes derived from the literature review.

An interview guide is essential when conducting semi-structured interviews, as it ensures alignment between interview questions and the overall research aims. The guide helps to structure the conversation so that core themes are consistently addressed across municipalities, while still allowing space for probing and follow-up questions (Iii and Hagstrom-Schmidt 2022; Kvale and Brinkmann 2009). This balance increases comparability across cases, which is necessary for cross-case analysis, and at the same time reduces the risk of overlooking locally specific insights (Bryman 2016). Developing an interview guide also enhances rigor and transparency. By documenting and piloting the guide, the study creates an audit trail that strengthens validity and dependability (Kallio et al. 2016). It further minimizes researcher bias by providing standardized prompts and planned probes, ensuring that questions are clear, non-leading, and systematically linked to the research framework (Castillo-Montoya 2016).

All interviews were conducted in a one-on-one setting (in person or via video conference, depending on logistics) and followed a similar procedure. Before each interview, the participant received information about the research purpose and the topics to be discussed. With the consent of the interviewees, each interview was audio-recorded to ensure an accurate record of the conversation. The interviews were conducted primarily in Dutch (the native language of the participants) to allow them

to express themselves comfortably and precisely. The recordings were then transcribed. For use in this thesis (which is in English), the interviews were translated into English. Care was taken during translation to preserve the meaning and tone of the original remarks. This was done by laying both versions next to each other and cross checking important passages. Following the interviews, the transcripts (and translations where applicable) formed the basis for analysis. Participants were assured that their identities would remain confidential in the thesis report; thus, in the analysis their statements are referenced generally (e.g., "Municipal Respondent from Rotterdam") rather than by name. This confidentiality, along with the informed consent process, is detailed in Section 3.7 on ethics, but it is noted here as an integral part of the interview protocol aimed at promoting openness in the responses.

3.4.1 Pairs of interviews and the importance of roles

A distinctive feature of the design was that interviews were organized in pairs. For each municipality, one interview was held with a project leader from Buurkracht and one with their direct contact within the municipality. Additionally, this ensured that both sides of the collaboration were represented. The paired setup allowed the research to capture complementary perspectives on the same case, adding to the triangulation of findings concerning the collaboration. This is important because many of the subjects described in the literature review (e.g., informal institutions and context) can be very subjective as each party can perceive them differently. Therefore, it is important to capture both sides, not only for practical reason, but also to increase the conceptual point of view. The use of interview pairs strengthened the study in two ways. First, it provided a more balanced account by reducing reliance on a single perspective and highlighting points of alignment or divergence between actors. Second, it enabled a deeper understanding of how formal policy frameworks translate into practice, as both partners discussed their shared projects and experiences from different vantage points. Additionally, an interview was held with a Marketeer at Buurkracht to gain insight in to how Buurkracht works and to get an overview of the daily operations. Table 3 shows who was interviewed and their corresponding role.

Role Buurkracht	Role Buurkracht	Role Municipality
Marketeer research and development	Project leader Boxtel	Municipal worker Boxtel
	Project leader Leeuwarden	Municipal worker Leeuwarden
	Project leader Rotterdam	Municipal worker Rotterdam
	Project leader Zaanstad	Municipal worker Zaanstad

Table 3. Interviewee overview.

In qualitative research, it is important to account for the role and position of each respondent. As a person's role shapes how they perceive the heating transition, what challenges they emphasize, and which solutions they consider realistic. Recognizing these roles prevents treating all perspectives as interchangeable and instead situates responses within their institutional context. This helps to explain differences in emphasis or interpretation between actors and ensures that findings are not read as neutral accounts but as role-informed viewpoints that reflect the responsibilities and interests of each respondent.

3.5 Document selection and thematic analysis

The document analysis was qualitative. Each municipal heating transition plan (Boxtel, Leeuwarden, Rotterdam, Zaanstad) was read carefully, and passages relevant to the research questions were noted.

The focus was on (1) formal institutional factors such as laws, regulations, formal plans, and organizational responsibilities (sub-question 1), and (2) references to stakeholder engagement or collaboration, which relate to the role of Buurkracht and informal working practices. The documents also provided contextual information, such as socio-economic conditions or the scale of the heating challenge. Which are useful for interpreting differences between municipalities (sub-question 3) and for the barriers to implementation (sub-question 4).

The core documents analyzed were the official HTV which each municipality was required to publish by 2021 as a roadmap for becoming gas-free. These texts outlined local goals, timelines, and technical solutions. Additional policy documents, such as climate agreements or council decisions, were reviewed where available to enrich the analysis.

3.5.1 Thematic Analysis

The analysis followed thematic analysis to identify recurring patterns and meanings across documents. In line with Braun and Clarke (2006), the process moved from familiarization with the material to the development of broader themes that reflected how municipalities frame the heating transition. These themes correspond with the sub-questions above. As Braun and Clarke (2023) also emphasize, thematic analysis is a reflexive process: the documents were treated not as neutral accounts but as narratives that actively construct responsibility, feasibility, and legitimacy. The recent methodological discussion on trustworthiness guided the analysis by stressing transparency and clarity in how themes are established and interpreted (Ahmed et al. 2025). See table 4 for the themes used and what their corresponding sub-question is.

Sub-question	Theme(s)
1	Formal rules and regulations
2	Informal rules and roles
3	Spatial factors
	Social factors
	Political factors
	Economic factors
4	Barriers to implementation

Table 4. Overview of themes.

This approach ensured that the document analysis provided insight into both the formal frameworks governing the heating transition and the way municipalities present collaboration. It offered a structured basis for comparing the four cases and for triangulating the findings with the interviews.

3.6 Data Analysis Approach and triangulation

The collected data were analyzed using a qualitative coding strategy, combining deductive themes derived from the research questions with inductive insights emerging from the material. An initial set of broad codes was developed based on the sub-questions and the themes for the thematic analysis (table 4), covering (1) formal rules and policies, (2) informal norms and expectations, (3) local contextual factors, and (4) collaboration processes and outcomes. As the analysis progressed, these categories were refined into sub-codes to capture recurring themes such as social and political factors. Inductive coding allowed new, unanticipated themes to be incorporated, ensuring that the analysis remained open to insights that were not predetermined by the literature.

In addition, the analysis incorporated the lens of common problems. These are challenges that are prevalent across all four municipalities and that bring the collaboration between Buurkracht and the municipality into focus. For this study, affordability of the heating transition and the effective engagement of citizens were selected as such common problems. These were choosing in accordance with Buurkracht and the municipalities, as they were able to recognize these problems and relate them to their own context (Gemeente Boxtel, 2021, 2023; Gemeente Leeuwarden, 2021; Gemeente Rotterdam, 2022; Gemeente Zaanstad, 2021). By examining how each municipality and Buurkracht addressed these issues, the study created a basis for meaningful cross-case comparison. This approach allowed the research to highlight not only whether common problems were recognized, but also how different institutional settings and local contexts shaped the responses to them.

3.6.1 Triangulation

The analysis proceeded in three steps. First, within-case or per municipality analysis was carried out by summarizing themes for each municipality into a narrative that highlighted how collaboration was described and experienced in that specific context, based on both the interviews in the paired form described in 3.4.1. Second, triangulation was applied by cross-checking interview findings with documentary evidence as described in 3.5. Third, cross-case analysis was conducted by systematically comparing similarities and differences across Boxtel, Leeuwarden, Rotterdam, and Zaanstad, with special attention to the selected common problems. This is done by constructing either a figure or table, showing the entire results chapter in an easy to understand and compare format. Following Yin (Yin 2018), this form of data/source triangulation strengthens construct validity by corroborating evidence across different types of material, while also exposing gaps or contradictions between formal policies and actors' lived experiences (Carter et al. 2014). The aim of the analysis was not to produce statistical generalizations but to develop analytical generalizations: insights into how collaboration in the heating transition is shaped by a combination of formal arrangements, informal practices, local conditions, and the ways in which actors respond to common problems. This approach connects detailed case findings to broader governance and energy transition debates, while remaining sensitive to the specificities of each municipality.

3.6.2 Validity and reliability

This study addresses the four quality criteria for rigorous case research: construct validity, internal validity, external validity, and reliability, as outlined by Gibbert et. al. (2008):

- **Construct validity:** convergent evidence from multiple sources—semi-structured interviews with key stakeholders, municipal HTVs and related policy documents, council proposals, climate/energy action plans, and meeting minutes—was used to corroborate key constructs (Gibbert, Ruigrok, and Wicki 2008). Core concepts (e.g., collaborative practices, formal rules, informal norms, local contextual conditions) were operationalized in a codebook prior to analysis and refined iteratively. An initial document review informed interview guides, ensuring that prompts directly referenced case-specific policies and conditions. These steps create a chain of evidence from raw data to constructs, strengthening construct validity (Eisenhardt, 1989)

- **Internal validity:** within cases, analysis followed pattern matching and explanation building: observed linkages among formal rules, informal practices, and collaboration outcomes were compared to emergent propositions and rival explanations (Gibbert et al., 2008). Cross-case comparison then examined whether patterns recur under different contextual conditions,

leveraging a replication logic typical of multiple-case designs to increase confidence in causal inferences (Eisenhardt, 1989; George & Bennett, 2005).

- **External validity:** generalization proceeds analytically, not statistically (Gerring, 2004). The multiple-case design, along with transparent case boundaries (each case = one municipality's heating-transition governance within a defined 2021–2025 window and administrative scope), supports theoretical sampling and facilitates transferability assessments (Gibbert et al., 2008). Rich contextual description (e.g., city size, governance traditions, housing stock, preferred technical pathways) enables readers to judge where findings may carry over (George & Bennett, 2005; Gerring, 2004).
- **Reliability:** reliability is enhanced through a documented case study protocol and a structured case study database (interview protocols, codebook versions, memos, and source excerpts) that enable procedural transparency and retracing of analytic steps (Yin 2003). These tactics complement the study's triangulation strategy and quality criteria (cf. Eisenhardt, 1989; Gibbert, Ruigrok, & Wicki, 2008).

Triangulation across interviews and documents, cross-case replication logic, and a documented analytic workflow collectively enhance the study's argumentative rigor while remaining aligned with theory-building goals typical of small-N designs (Eisenhardt, 1989; George & Bennett, 2005; Gibbert et al., 2008).

3.7 Ethical Considerations

This research was conducted with attention to ethical standards for studies involving human participants and use of organizational information. Informed consent was obtained from all interview participants prior to each interview, through a signed contract. Participants were provided with an explanation of the study's purpose, the types of questions that would be asked, and how the data would be used. They were informed that their participation was voluntary and that they could decline to answer any question or terminate the interview at any time. Consent was also explicitly sought for audio-recording the interview. All interviewees agreed to be recorded for research purposes.

To protect the privacy and interests of participants, the study ensured confidentiality of responses. No personal names or identifying details (such as specific job titles if they could reveal identity in a small organization) are reported in this thesis. Instead, generic descriptors are used (e.g., "Buurkracht project manager", "municipal representative from City A"). This was communicated to participants as part of the consent process, so they would feel comfortable sharing candid insights without concern for personal attribution in public documents. The data (audio recordings and transcripts) have been stored securely on a password-protected device accessible only to the researcher (and academic supervisors if required), and will be deleted or archived in accordance with university data management guidelines after the conclusion of the research project. When translating interview excerpts from Dutch to English, care was taken not to distort meaning.

The study also maintained ethical practice in analyzing and reporting data. Given that some interview questions touched on potentially sensitive topics (such as challenges or criticisms in the collaboration), these topics were approached with neutrality and respect. The researcher's role was solely as an independent academic investigator; although Buurkracht is a subject of the study, the researcher was not an employee of Buurkracht nor of the municipalities, which helped minimize conflicts of interest.

3.8 Methodological Limitations

Like any research design, this study faces several limitations that must be acknowledged. These limitations stem from choices in scope, data availability, and the inherent characteristics of qualitative case study research:

- **Scope and generalizability:** the research is confined to four cases within the Netherlands, all of which were pre-selected pilot municipalities that met certain favorable criteria for collaboration. While this strengthens internal comparisons, it limits external generalizability. The findings and conclusions drawn from Boxtel, Leeuwarden, Rotterdam, and Zaanstad may not readily apply to municipalities that did not meet those criteria or to other countries' contexts. The study's intent is to provide depth over breadth – the insights are context-specific and meant to illuminate mechanisms and factors rather than produce statistically generalizable results. Readers should be cautious in extending the results beyond similar settings. However, the analytical insights may still be transferable to contexts with analogous conditions (for example, other Dutch municipalities engaging in public–civil collaborations for energy transition), with appropriate consideration of differences in context.

- **Limited number of interviews:** The qualitative data relies on a small sample of interviewees (N=9), which, although targeted to the most knowledgeable stakeholders, inherently captures a limited range of perspectives. Within each case, only two perspectives (Buurkracht's local project manager and municipal officials) are directly represented. This means that other viewpoints, such as those of residents involved in neighborhood teams, other municipal staff members (e.g., aldermen, civil servants from different departments), or external partners, are not directly heard. The data might therefore omit certain dynamics or disagreements that would be visible if a broader array of participants were interviewed. Moreover, each interviewee's responses are subject to personal biases or subjective interpretations of events. For instance, a municipal official might portray the collaboration more positively due to political considerations or might downplay issues, while a Buurkracht employee might emphasize challenges to justify slow progress. The research attempted to mitigate bias by interviewing both sides and by assuring anonymity (to encourage honesty), but the possibility of social desirability bias or selective recall in responses remains. The limited interview sample was partly a practical constraint (time and access) and a deliberate focus on principal actors, but it is a limitation in terms of exhaustive understanding.

- **Reliance on self-reported data:** closely related to the above, much of the qualitative evidence comes from self-reported information from interviews. This means the findings about "informal norms" or "barriers" are often based on participants' descriptions and opinions, which may not always fully align with observable fact. People might unintentionally provide inaccurate information (due to memory or knowledge limits) or frame things in a way that casts their actions in a favorable light. Triangulation with documents and multiple sources was used to validate claims whenever possible, but not every statement could be cross verified. Thus, some insights, especially regarding informal or interpersonal aspects, should be interpreted as perceptions of those involved, which is valuable but different from an objective fact. This is an inherent limitation in qualitative work that deals with human experiences.

- **Document availability and limitations:** the document analysis was constrained to what was publicly available and written. In some cases, official documents may not fully reflect the current state of implementation or the nuances of collaboration. For instance, a HTV is a high-

level plan and might not mention Buurkracht or specific collaboration arrangements at all (especially if those were developed after the plan). There may be internal memos, meeting notes, or informal communications that significantly shaped the collaboration but were not accessible to analyze. Therefore, the formal documents serve as an important backdrop and source for formal institutional context, but they might lack detail on operational collaboration. This limitation was again mitigated by discussing such details in interviews (e.g., asking interviewees about any memorandum of understanding or working agreements in practice), but it means some formal aspects might have been missed if not documented or mentioned by participants. Additionally, documents are static and may be outdated; policies can change, or practical approaches can evolve faster on the ground than strategy documents are updated. The research captured documents as of 2021–2024, so any very recent changes or unpublished strategies might not be reflected.

- **Time frame of the study:** The research was conducted during 2024–2025, which corresponds to the first year to year-and-a-half of the Buurkracht pilot projects in these municipalities. Indeed, all four collaborations officially commenced in early 2024, and this thesis research captures their development through mid-2025. This relatively short time frame is a limitation because the heating transition is a long-term process and collaborations may evolve significantly over time. Early-stage findings might not hold in later stages; for example, some barriers identified now might be overcome after two or three years, or new challenges might emerge later (such as when moving from planning to actual infrastructure implementation). The study provides a snapshot of initial collaboration dynamics and early outcomes, but it cannot fully assess long-term effectiveness or sustainability of the Buurkracht–municipality partnership. In addition, some results, like the speed of implementation or the establishment of trust, are preliminary. The limited temporal scope means causality is inferred cautiously; we can identify early correlations (e.g., high informal communication correlating with faster progress in one case), but longer observation would be needed to confirm enduring causal relationships. Future evaluations at later stages of the project would complement this study by showing which early observations persisted or changed.

- **Analytical subjectivity:** Qualitative coding and thematic analysis involve a degree of subjectivity in interpretation. While a systematic approach was used, the researcher's background knowledge and perspectives influence how data is coded and interpreted. There is a risk of confirmation bias (seeing patterns that fit preconceived expectations based on the literature). To counter this, the researcher made efforts to remain reflexive – for instance, by cross-checking interpretations with actual quotes and considering alternative explanations for the findings. Still, unlike quantitative analysis, qualitative analysis does not produce results that are unequivocally replicable by another researcher. Another person might categorize or emphasize themes slightly differently. This is acknowledged as a limitation; however, transparency in methods (as provided in this chapter) is intended to allow readers to understand how conclusions were reached and to trust that they are grounded in the evidence collected.

Despite these limitations, the chosen methodology was deemed appropriate for the exploratory goals of the thesis. The focus on a small number of strategic cases and depth of insight is a trade-off against breadth, but it aligns with the research objective of understanding how and why collaboration varies, rather than measuring how often something occurs in a large population. The limitations mentioned

do not invalidate the findings; rather, they provide context for how to interpret them. In particular, the study provides analytical generalization, as it uses empirical observations to illustrate and refine theoretical ideas about collaboration and institutions. The ethical and careful execution of the methods lends credibility to the results, and the limitations are openly recognized to qualify the scope of the conclusions drawn.

4. Formal institutions

This chapter outlines the formal institutional context in which the municipal heating transition takes place. This chapter presents the findings on the formal institutional setting using the same structure as the study's data sources. Interview results from Buurkracht are shown first, followed by the interview results from the municipality. This follows the methods and style described in Chapter 3.6.1 and ensures both actors' views are presented separately. The document analysis then shows how these formal rules appear in the HTV and related municipal plans. The chapter ends with a cross-case table and a short answer to the sub-question. Interpretation is addressed in Chapter 8.

4.1 Formal institutional framework of the municipal heating transition

Although the interviews were conducted in four different municipalities, both municipal officials and Buurkracht coordinators described highly similar formal arrangements for organizing the heating transition. Across all interview pairs, the HTV was identified as the central planning document guiding local activities, coordination with external partners, and communication with residents. Other formal instruments and actors were mentioned only occasionally, indicating that the same overarching institutional setting applies in each case. This uniformity reflects how the formal responsibilities of municipalities are defined within a single national and European policy system, which prescribes the development of comparable local plans and procedures.

These consistent interview findings form the starting point for the analysis presented in this chapter. Building on them, the document analysis provided a systematic overview of the wider legal and administrative context in which the HTV is situated. Each municipal document was examined for references to higher-level policy frameworks, legal instruments, and responsible authorities. These were then compared across the four cases to identify the shared institutional elements that shape local planning. Because the resulting formal structure is the same for all municipalities, the analytical focus here lies on describing that common framework rather than comparing cases.

Figure 3 summarizes this structure and situates the HTV within the broader multilevel system that governs the Dutch heating transition. The figure illustrates how formal responsibilities and instruments are distributed across European, national, regional, municipal, intermediary, and local levels, and it serves as the reference point for the following sections, which outline each level in turn based on the combined insights from the interviews and document analysis. It presents the multilevel formal structure that governs the municipal heating transition in the Netherlands. It brings together the legal and administrative levels identified through the document analysis. The figure visualizes how rules and policy instruments are arranged across European, national, regional, municipal, intermediary, and local levels.

At the top, the European level establishes the overarching climate and energy objectives that shape national legislation. The national level translates these objectives into binding laws, regulatory frameworks, and funding instruments. The regional level links national and local planning through spatial coordination and infrastructure management. The municipal level is the point at which these frameworks are operationalized in local policy documents such as the HTV and related plans. Below this, the intermediary level includes Buurkracht while the local level represents the residents.

The figure shows that the formal system functions as a hierarchy of interlinked levels rather than separate domains. Each level builds on the directives, authorizations, and procedures set by the level above it.

The figure also illustrates how the formal instruments are interconnected across the different levels of governance. While many legal and administrative links exist between the various laws, programs, and actors, only the three most relevant connections have been made explicit in the diagram. These are color-coded to highlight their functional clusters: blue for the HTV group, green for the Omgevingswet group, and red for the financial instruments group. The use of color does not imply that other relations are absent; rather, it reflects that the interviews and document analysis identified these three linkages as the most prominent in the formal organization of the heating transition and in the collaboration between municipalities and intermediaries. These were identified to be most prominent, by asking participants what kind of subjects were most relevant to them when looking at formal institutions. Although they could not mention direct laws, they did mention subjects like planning and finance to be crucial to their work.

Another important observation is the absence of a direct formal connection between the municipal level and the lower levels in the figure. The interviews showed that the collaboration between Buurkracht and municipalities is not formally regulated through specific legal or procedural instruments. This interaction takes place through informal coordination and communication, which were repeatedly mentioned as informal, thus not represented in the formal framework. The informal aspects of this collaboration, and their implications, are examined in Chapter 5. Because the interviews highlighted that for this collaboration the contact with the local level is informal, this layer does not include an institution, which is symbolized with a question mark. Still, including this layer is important to show the ways in which money flows through formal institutions.
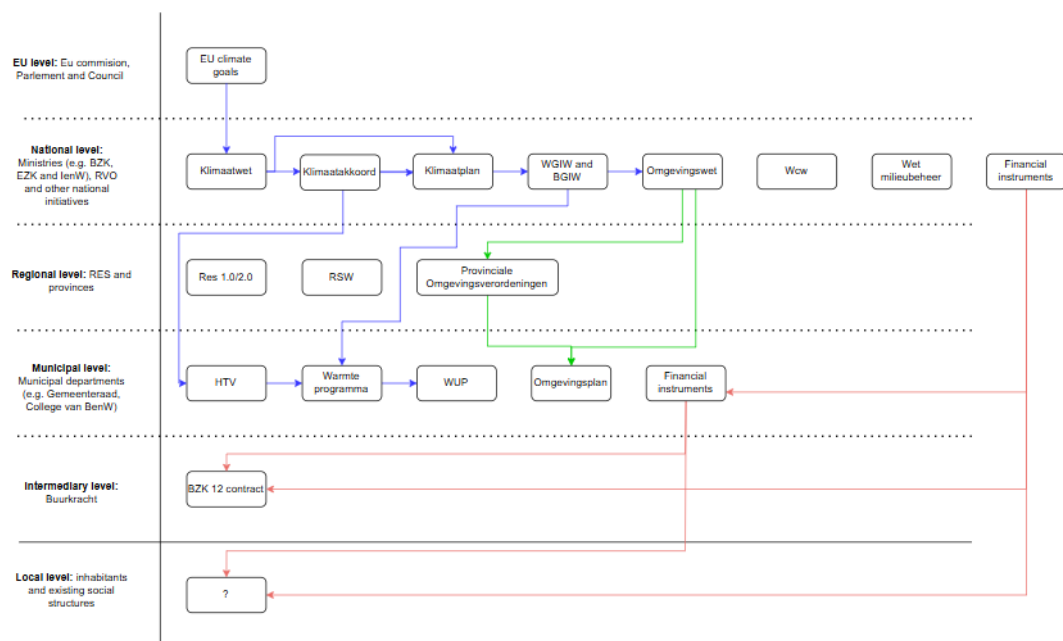
Figure 4. Formal institutional framework of the municipal heating transition

4.2 Analysis of specific formal institutions

This section provides a detailed description of the eighteen formal institutions identified in Figure 3. This section starts off with a description of the most important actors per level. Whereafter, each institution is presented separately to outline its formal function, scope, and position within the multilevel framework. After these individual descriptions, the section concludes with an overview of the three functional groups highlighted in the figure: the HTV group (blue), the Omgevingswet group (green), and the financial instruments group (red). Starting with the actors:

- At the **European level**, the main actors are the European Commission, the European Parliament, and the Council of the European Union. Together they define the overarching climate and energy targets for all Member States, negotiate directives and regulations such as the European Climate Law and Renewable Energy Directive, and monitor national progress. These institutions form the constitutional starting point for the Dutch legal and policy framework on energy and climate.

- At the **national level**, the key actors are the ministries, particularly the Ministry of the Interior and Kingdom Relations (BZK), the Ministry of Economic Affairs and Climate Policy (EZK), and the Ministry of Infrastructure and Water Management (IenW). They jointly develop and implement national climate policy, administer the main legislative acts, and provide funding instruments for regional and municipal execution. The Rijksdienst voor Ondernemend Nederland (RVO) implements most subsidy programs and pilot schemes, while other national initiatives manage specific funding or support measures related to the heating transition.

- At the **regional level**, coordination occurs through the provinces and the Regional Energy Strategies (RES). Provincial governments translate national legislation into binding Provinciale Omgevingsverordeningen and oversee spatial and environmental coherence between municipalities. The RES structures facilitate collaboration between provinces, municipalities, grid operators, and water boards to align energy planning and infrastructure development at the regional scale.

- At the **municipal level**, the key actors are the municipal departments responsible for spatial and climate policy, led by the Gemeenteraad and the College van Burgemeester en Wethouders (B&W). The municipal council adopts strategic documents such as the Warmteprogramma and Omgevingsplan, while the executive board and administrative staff coordinate implementation, stakeholder engagement, and area-based planning.

- At the **intermediary level**, Buurkracht operates as a semi-formal organization that connects municipalities and residents. Funded initially through national contracts with the Ministry of BZK, Buurkracht supports neighborhood teams, facilitates citizen participation, and translates formal municipal goals into local action.

- At the **local level**, the principal actors are inhabitants and existing social structures, including neighborhood associations, homeowner groups, and local initiatives. These actors implement energy-saving measures and participate in pilot projects, representing the point where formal frameworks meet everyday practice.

Together, these actors form the operational landscape of the formal governance framework depicted in Figure 3, linking European climate objectives with local implementation. Now the different institutions are defined:

- **EU Climate and Energy Goals**: The European Union has set binding objectives requiring all Member States to reduce greenhouse-gas emissions by at least 55 percent by 2030 and to achieve climate neutrality by 2050. These targets form the overarching policy framework for national climate legislation and planning across Europe. Because the European framework operates beyond the scope of this study, the various laws, directives, and policy packages have been taken together here as a single category representing the EU's collective climate and energy policy (EU 2021).

- **Klimaatwet:** The Klimaatwet transposes the EU objectives into Dutch law. It sets legally binding national reduction targets of 55 percent CO_2 by 2030 and climate neutrality by 2050 compared with 1990 levels. The law obliges the government to prepare periodic climate plans and annual progress reports (Klimaatwet 2023).

- **Klimaatplan:** The Klimaatplan is the national climate strategy required under the Klimaatwet. The plan is updated every five years and sets out how the Netherlands will meet its emission reduction targets. It defines national measures for each sector, including the built environment, and provides the policy direction that guides instruments such as the Klimaatakkoord, the Wgiw and the Bgiw. Municipal planning documents such as the Warmteprogramma must align with the measures and timelines set in the Klimaatplan (Ministerie van Algemene Zaken 2025).

- **Klimaatakkoord:** The Dutch Klimaatakkoord is a political and administrative agreement rather than a legally binding act. It set the national commitment to a carbon-neutral built environment by 2050 and requested every municipality to prepare a HTV and participate in a Regionale Energiestrategie (RES). Although non-binding, it established municipalities as key coordinators in the local heating transition and introduced the neighborhood-based gas phase-out approach (Klimaatakkoord 2019). Therefore, it can be seen as a way to operationalize the Klimaatwet (Ministerie van Economische Zaken en Klimaat 2018).

- **Wet milieubeheer:** The Wet milieubeheer forms the legal basis for Dutch environmental policy. It regulates environmental management, emissions, and energy-efficiency obligations for public authorities and organizations. It provides the framework for monitoring, reporting, and environmental planning that supports the broader climate and energy goals (Wet milieubeheer 2025).

- **Wet Gemeentelijke Instrumenten Heating transition (Wgiw) and Besluit gemeentelijke instrumenten heating transition (Bgiw):** The Wet gemeentelijke instrumenten heating transition , or Wgiw, is a national law that gives municipalities legal authority to plan the transition away from natural gas (Eerste kamer der staten generaal 2025). It adds new powers to the Omgevingswet so that municipalities can designate areas that will switch to sustainable heat and prepare a heat program that sets out how this transition will take place. The law defines the mandate but leaves operational details to secondary rules. The Besluit gemeentelijke instrumenten heating transition , or Bgiw, is the implementing decree created by the Ministry of Housing and Spatial Planning. It translates the Wgiw into concrete procedures. It specifies what a heat program must contain, how an area can be designated for gas phase out and which protections apply for residents. The Bgiw also updates parts of the subordinate legislation under the Omgevingswet, so that the new municipal powers can be used in practice (Ministerie van Volkshuisvesting en Ruimtelijke 2025). Together, the Wgiw and Bgiw expand the Omgevingswet with the instruments needed for the local heating transition.

- **Omgevingswet:** The Omgevingswet, in force since 1 January 2024, merges 26 laws on spatial planning, environment, water, and construction into a single framework for the physical environment. It streamlines procedures, introduces a unified digital system, and requires each municipality to adopt one integrated Omgevingsplan. The law provides the overarching structure within which provinces issue Provinciale Omgevingsverordeningen to coordinate spatial and environmental policy across municipalities. It also embeds active citizen participation and promotes locally tailored policymaking (Omgevingswet 2025).

- **Wet Collectieve Warmtevoorziening (Wcw) and Warmtewet:** The Wet collectieve warmtevoorziening (Wcw), also known as Warmtewet 2.0, is forthcoming legislation that will replace the current Warmtewet and modernize the framework for collective heat systems. It authorizes municipalities to designate a publicly owned heat company responsible for developing and operating district heating networks. The law introduces CO_2 standards, transparency requirements, and consumer protections to align collective heating with national climate goals. Although not yet in force (as of 2025), the Wcw will complement the Wgiw and Bgiw by extending municipal powers from planning to regulating local heat supply (Warmtewet 2025; Wetsvoorstel collectieve warmte 2025).

- **National Financial Instruments:** Several national subsidy schemes support municipalities, residents, and intermediaries in implementing the heating transition. These include PAW, BZK Energiebespaarcoalitie, ISDE, SAH, SDE++, RREW, and the Nationaal Warmtefonds. Together, these programs provide financial resources for neighborhood pilots, building insulation, renewable heat production, and citizen participation, linking national climate policy to local execution (Nationaal Warmtefonds 2025; NPLW 2025; RVO 2025d, 2025a, 2025c, 2025b).

- **Regionale Energiestrategie (RES):** The RES framework organizes regional collaboration between municipalities, provinces, grid operators, and water boards. Each region prepares a Regionale Energiestrategie that identifies renewable-energy production targets and infrastructure requirements(Energieregio Noord-Holland 2021; Energietafel 2025; Energiewerkplaats Brabant 2025; RES 2025) .

- **Regionale Structuur Warmte (RSW):** The RSW supplements the RES by focusing on heat-supply and transport infrastructure. It identifies potential heat sources and regional connections between municipalities and industries to ensure alignment of local and regional heat systems (Natonaal programaa RES RSW 2025).

- **Provinciale Omgevingsverordeningen**: Provincial environmental ordinances translate national spatial-planning and environmental policy into binding regional rules. They coordinate land-use, infrastructure, and environmental considerations across municipalities within each province (Fryslân 2025; Provincie Noord Holland 2025; Provincie Noord-Brabant 2025; Provincie Zuid-Holland 2025).

- **Omgevingsplan:** The Omgevingsplan is the legally binding municipal plan required under the Omgevingswet. It integrates all spatial, environmental, and infrastructural regulations within the municipality and serves as the umbrella document under which local heating plans are embedded (Gemeente Boxtel n.d.; Gemeente Leeuwarden n.d.; Gemeente Rotterdam 2025; Gemeente Zaanstad n.d.).

- **HTV:** The HTV is the municipal heat-transition strategy created under the Klimaatakkoord. Every municipality had to publish an HTV by the end of 2021. The document identifies the preferred sustainable heat solutions for each neighborhood, outlines the expected timing for phasing out

natural gas and sets priorities for actions up to 2030. The HTV provides the initial strategic direction for local heating policy and forms the basis for later instruments such as the Warmteprogramma and the Wijkuitvoeringsplannen (Gemeente Boxtel 2021; Gemeente Leeuwarden 2021; Gemeente Rotterdam 2022; Gemeente Zaanstad 2021).

- **Warmteprogramma:** The Warmteprogramma is the strategic municipal plan that specifies when and how each neighborhood will switch from natural gas to sustainable alternatives. It succeeds the earlier, non-binding HTV and will become mandatory under the Wgiw and Bgiw (NLPW, 2025). While writing this study only Boxtel and Sint-Michielsgestel have published their Warmteprogramma.
- **Wijkuitvoeringsplannen (WUPs):** The WUPs are neighborhood-level plans that detail the technical solutions, participation processes, and partnerships used to conduct the heating transition. They form the operational level of municipal implementation of the visions and programs (NLPW 2025).
- **Municipal Financial Instruments:** Municipal subsidy schemes and co-financing arrangements that support local implementation of the heating transition (e.g., homeowner incentives, neighborhood pilots, revolving funds). These operate within the municipal planning framework and align with national funding programs.
- **BZK–Buurkracht Contract:** This contract between the Ministry of the Interior (BZK) and Buurkracht formally defines the intermediary's role in supporting citizen participation and local collaboration in the heating transition. It establishes the administrative and financial conditions for Buurkracht's activities.

With the actors and institutions clearly defined. The color groups can be identified:

- **Green: Omgevingswet group spatial and legal integration.** The green group represents the integrated spatial and environmental framework established under the Omgevingswet. Together, the Omgevingswet, the Omgevingsplan, and the Provinciale Omgevingsverordening form the decentralized system that governs the physical environment in the Netherlands. The Omgevingswet is the overarching national law that merges 26 previous acts and introduces new rules for managing the physical environment. The Omgevingsplan is the municipal instrument that combines all local rules for the physical domain, such as construction, land use, environmental, and public-space regulations, into one integrated plan. The Provinciale Omgevingsverordening serves the same function at the provincial level by consolidating all relevant regional regulations on spatial and environmental matters. Together, these three instruments make up the decentralized toolkit of the Omgevingswet, designed to make environmental and spatial rules clearer and more coherent across governance levels. They ensure that climate and energy objectives are implemented consistently within the broader framework for the physical environment and provide the legal structure through which the Warmteprogramma will later become a binding municipal instrument under the Wgiw and Bgiw
- **Red: Financial Instruments Group: Funding and Implementation Support.** The red group brings together the financial instruments that provide the funding framework for implementing the heating transition. It includes the national subsidy schemes administered by the Rijksdienst voor Ondernemend Nederland (RVO)—Programma Aardgasvrije Wijken (PAW), BZK Energiebespaarcoalitie, Investeringssubsidie Duurzame Energie en Energiebesparing

(ISDE), Stimuleringsregeling Aardgasvrije Huurwoningen (SAH), Stimulering Duurzame Energieproductie en Klimaattransitie (SDE++), Regeling Reductie Energiegebruik Woningen (RREW), and the Nationaal Warmtefonds—as well as municipal financial instruments used to co-finance local projects. A related mechanism is the BZK–Buurkracht contract, which defines the intermediary's role in supporting citizen participation and local collaboration. The first year of this contract is funded by the national government through BZK, while the second and third years are financed directly by the municipalities involved. This gradual funding shift reflects how responsibilities for implementation move from the national to the municipal level once initial support has been established. Together, these schemes and funds channel national and municipal resources to municipalities, housing associations, and residents to enable the practical execution of local heating policies. They support neighborhood pilots, technical measures such as insulation and heat pumps, and citizen-engagement initiatives. In the interviews, both municipal and intermediary actors consistently referred to these programs as essential for bridging the gap between formal planning and local implementation.

- **Blue HTV Group: Municipal Planning and Policy Continuity:** The blue group contains the planning instruments that structure how municipalities organize the heating transition. These instruments form a sequence that links long term climate goals to local implementation. The chain starts at the European level, where emission reduction targets are set. These targets are transposed into Dutch law through the Klimaatwet, which requires the national government to publish a Klimaatplan every five years. The Klimaatplan sets national measures and timelines for each sector, including the built environment. The Klimaatakkoord builds on this plan and establishes the national policy framework for local heat strategies. It confirms the coordinating role of municipalities and introduces the requirement for every municipality to create an HTV. The HTV outlines preferred heat solutions per neighborhood and identifies the expected timing for the phase out of natural gas. The forthcoming Wgiw and Bgiw provide the legal basis for the next step in this chain. They give municipalities the authority to prepare a binding Warmteprogramma under the Omgevingswet. The Warmteprogramma sets out how the transition will proceed within the municipality and specifies the approach for phasing out natural gas and identifying sustainable alternatives. The Uitvoeringsprogramma Heating transition translates the Warmteprogramma into actions, responsibilities and timelines for the short term. At the neighborhood level, Wijkuitvoeringsplannen specify concrete steps, involvement of local actors and the expected sequence of measures. All of these documents must be updated every five years, which creates a regular moment for municipalities to review progress and adjust plans. Together, these instruments form a hierarchical planning structure that connects European and national objectives to local execution. They define the procedural pathway from long term goal setting to neighborhood implementation. In interviews, municipal officials and Buurkracht coordinators referred to the HTV, the Warmteprogramma and the WUPs as the main documents guiding their work, confirming that this group represents the core of the formal heating transition framework.

To make this important group easier to understand figure 4 was made. It shows how different formal institutions influence each other and how feedback flows. For example, through giving input or making something else mandatory. Some of the formal institutions are yellow, this means that they are input for themselves. These institutions are rewritten and updated every 5 years to keep up with changes. There is also one double arrow between Warmte Programma

and WUP. This is because when they are rewritten, they influence each other, by having implementation through the WUP and plan making in the Warmte Programma be in a constant feedback loop.
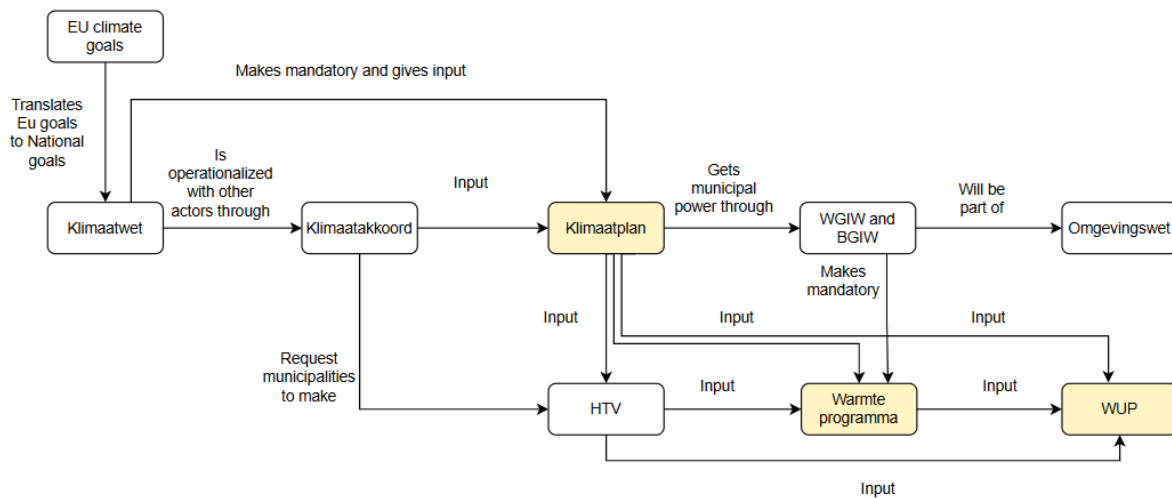
Figure 5. Overview of blue HTV group.

4.3 Answering sub-question 2

The collaboration between Buurkracht and the municipalities takes place within a shared formal institutional framework that structures the Dutch municipal heating transition. Across all four municipalities, this framework is almost identical. The interviews and document analysis showed that cooperation is not defined by one specific law or regulation but occurs inside a broader system of planning, legal, and financial instruments. These instruments determine the municipal responsibilities, participation requirements, and funding conditions that indirectly shape how municipalities and Buurkracht work together. Three functional clusters can be distinguished: the HTV group (blue), the Omgevingswet group (green), and the financial instruments group (red). Other laws mentioned in the HTVs can also be important, but these three clusters were pointed out by the interviews as most important.

The HTV group (blue) represents the planning chain that links European and national climate goals to local implementation. The European Climate Law, the Klimaatwet, Klimaatplan and the Klimaatakkoord set emission targets and assign municipalities a central role in the heating transition. These policies require every municipality to prepare a HTV that outlines preferred heat solutions and the expected timing for the phase out of natural gas. Neighborhood level implementation follows through Wijkuitvoeringsplannen, which translates this strategy into concrete actions. The forthcoming Wgiw and Bgiw strengthen this responsibility by introducing the binding Warmteprogramma under the Omgevingswet. Buurkracht is not mentioned in these instruments, but they require municipalities to organize participation and communication, which creates a structural need for collaboration with intermediaries.

The Omgevingswet group (green) provides the overarching legal and spatial framework. The Omgevingswet merges existing laws on the physical environment and requires each municipality to adopt one Omgevingsplan, integrating climate and energy policies. The Provinciale Omgevingsverordeningen ensure coherence across regions. The law explicitly requires citizen

participation in planning processes, indirectly supporting the involvement of Buurkracht as an intermediary that helps municipalities meet this legal obligation.

The financial instruments group (red) establishes the funding and administrative mechanisms that make collaboration possible. National subsidy programs such as Programma Aardgasvrije Wijken (PAW), ISDE, SAH, SDE++, RREW, and the Nationaal Warmtefonds channel financial support from the national to the municipal level for both technical and participatory projects. The BZK–Buurkracht contract is the only formal arrangement that directly defines the intermediary's role. It specifies Buurkracht's responsibilities in citizen engagement and is financed by the national government in the first year and by municipalities, thereafter, symbolizing the decentralized transfer of responsibility from state to local level.

In answer to the sub-question *"Which formal rules, regulations, plans, and policies shape the collaboration between Buurkracht and the municipalities?"* the collaboration is shaped by the combined influence of these three clusters. The HTV group (blue) defines the planning responsibilities that require municipalities to engage citizens; the Omgevingswet group (green) provides the legal and procedural framework that formalizes participation; and the financial instruments group (red) delivers the funding and contractual basis that makes cooperation feasible. None of these frameworks prescribe the collaboration directly, but together they create the institutional conditions that make it necessary. Because the same system applies in all municipalities, the formal setting of the collaboration is uniform, and variation arises only through informal coordination, discussed further in Chapter 5.

5. Informal institutions

This chapter builds directly on Chapter 4, which outlined the formal institutional framework governing the municipal heating transition. While those formal rules set the official boundaries of collaboration, much of the coordination between municipalities and Buurkracht operates through informal norms, working routines, and shared understandings that are not codified in policy. This chapter reports how informal rules and routines appear in practice. The structure follows the method and style described in Chapter 3.6.1: interview results from Buurkracht are presented first, then interview results from the municipality. The document analysis then shows whether these informal patterns are visible in written materials. The chapter ends with a comparative table and a short answer to the sub-question. Interpretation follows in Chapter 8.

5.1 Informal institutions in Boxtel and Sint-Michielsgestel

The case of Leeuwarden presents how collaboration between Buurkracht and the municipality functions in practice. The findings below combine results from paired interviews and document analysis to show how informal institutions are present in Boxtel and Sint-Michielsgestel

5.1.1 Interview results Buurkracht Boxtel and Sint-Michielsgestel: informal institutions

Buurkracht describes a working environment in Boxtel that relies heavily on informal contact, personal familiarity and frequent interaction with municipal staff. Communication often takes place through short, direct channels. Buurkracht notes that calls and text messages are common and that cooperation with the municipality takes place in a way that feels relaxed. Contact persons inside the municipality have been stable over an extended period. This long cooperation has created a pattern that was described as internal colleagueship rather than a contractor–client relation.

Buurkracht highlights the importance of two municipal staff members who functioned as central contact points from the beginning of the project. These individuals actively promoted Buurkracht inside the municipal organization. According to the interview, they introduced Buurkracht repeatedly across different departments. These actions made it easier for Buurkracht to gain access to other policy units. Which was needed for completing early initiatives, like building a small green space. When one of these contact points left the organization, Buurkracht indicated that the continuity of cooperation depended strongly on the remaining person and on whoever would replace the colleague who left.

The interview describes that there is routine and unplanned interaction inside the town hall. The small size of the municipality shapes this. Buurkracht reports that it is common to run into staff from other departments near shared spaces like the coffee machine. These moments create direct access to municipal colleagues from departments like climate adaptation, spatial planning, green management or social domain. Buurkracht experiences this as a normal part of how collaboration takes place. Buurkracht also mentions that the small size of the sustainability department of the municipality is an important factor in the informal collaboration.

The relationship between Buurkracht and the municipality is described as close. The interview mentions that municipal staff sometimes refer to themselves and Buurkracht as if they are part of the same organization. Buurkracht provides an anecdote where a municipal employee introduced herself at a talk by saying that she was "from Buurkracht", which the interviewee saw as a sign that internal boundaries were experienced as low. Buurkracht states that this collegial dynamic helps them operate and communicate effectively.

Buurkracht notes that long-term presence strongly shapes local cooperation. The project runs for three years. According to the interview, this allowed Buurkracht to invest time in building trust with different parties. At the start these parties resisted working with Buurkracht. Over time, through repeated interaction, they established cooperation. One example given is the joint organization of thermal camera walks in the winter. This was an event organized in collaboration with the municipality and was seen as an example of successful informal collaboration. Inside the town hall, municipal staff have started to recognize Buurkracht and started conversations between them. Buurkracht states that this visibility has contributed to the spread of the project across departments.

5.1.2 Interview results municipality of Boxtel and Sint-Michielsgestel: informal institutions

The municipality describes informal cooperation with Buurkracht as strongly shaped by personal contact, accessibility and long-term presence. According to the interview, daily collaboration relies on frequent and direct communication. Contact with Buurkracht happens through ongoing calls, messages and regular coordination moments.

Informal expectations about trust-building are central. The municipality reports that trust between government and residents is low. This shapes how municipal staff approach neighborhood projects. They stress that forcing measures is avoided because it damages trust. The interviewee describes that small, early actions are used to show reliability. These actions are meant to demonstrate that the municipality delivers on agreements before asking residents to invest in larger steps. The interview highlights the importance of Buurkracht within this process. They provide a way for the municipality to engage with citizens through a new channel, where the informal collaboration between the municipality and Buurkracht allows for more informal engagement with the neighborhoods, in turn building long term trust.

The municipality highlights a pattern of vulnerability and approachability as an informal norm. Several anecdotes illustrate this. The interview includes a detailed anecdote about a local street-theatre style action. Municipal and Buurkracht staff walked through villages with the large chair construction while their faces were painted white. They did not speak when approached by residents. The intention was to generate curiosity and local discussion. A media campaign encouraged residents to share sightings of the chair. According to the interview, this unconventional action drew attention and helped start the project with a high number of questionnaire responses. The interviewee explains that using this surprising setup lowered social thresholds for residents and allowed informal conversation. Being visibly approachable in these situations is described as part of the strategy. According to the interview this approach was only possible because of the informal way of collaboration and communication with Buurkracht in organizing and supervising these events.

Informal relations inside the municipal organization also influence the collaboration. The interviewee notes that departments such as green management and sustainability operate with different perspectives. These differences affect coordination because goals and expectations are not always aligned. The municipal contact person explains that convincing colleagues to prioritize resident-led actions can be difficult and depends on the strength of personal working relations rather than formal procedures.

The municipality also notes that feedback loops with Buurkracht depend on internal initiative. The interviewee explains that the municipality regularly provides feedback about neighborhood developments and what they observe. They would like Buurkracht to make more use of this empirical

input. According to the interview, the municipality often needs to insist to get follow-up from Buurkracht on this feedback.

5.1.3 Document analysis of Sint-Michielsgestel: informal institutions

The municipal documents confirm the interview findings that cooperation in Boxtel is organized through short communication lines, accessible interaction between departments and partners, and a facilitative operating style. The documents state reflects the broad interconnectedness between policy domains that Buurkracht and municipal staff described in the interviews. The program explains that Boxtel's approach depends on cooperation "met woningbouwcorporaties, lokale ondernemers, energiecoöperaties, netbeheerder Enexis en andere gemeenten in de regio Noordoost-Brabant" ("with housing corporations, local entrepreneurs, energy cooperatives, grid operator Enexis and other municipalities in the Noordoost-Brabant region") (Gemeente Boxtel, 2023b, p. 7). This corresponds to Buurkracht's accounts of routine interactions with climate adaptation, spatial planning, green management, the social domain and welfare organizations. The documents further emphasize that different municipal units share responsibility for executing the heating transition, which aligns with the interview accounts of frequent coordination across departments.

The approach to public engagement described in the documents also closely reflects the interview findings. The municipality commits to ensuring that progress is "begrijpelijk en navolgbaar voor iedereen" ("understandable and traceable for everyone") and communicated through "heldere beelden en toegankelijke taal" ("clear visuals and accessible language") (Gemeente Boxtel, 2023b, p. 33). Interviews with both Buurkracht and the municipality highlighted that communication in Boxtel is direct and frequent, with staff relying on personal contact and low-threshold interaction. The documents note that "betrokkenheid is hierin het sleutelwoord" ("engagement is the key word here") (Gemeente Boxtel, 2023b, p. 33), confirming the importance of being involved and continuous contact with residents and each other that interviewees described.

This emphasis on local embeddedness is further visible in the document's communication strategy. The programme specifies that information is shared through "lokale partners, zoals ondernemers en wijkraden, om informatie naar inwoners te brengen" ("local partners, such as entrepreneurs and neighborhoodcouncils, to bring information to residents") (Gemeente Boxtel, 2023b, p. 31). This aligns with the interview accounts that collaboration relies on personal familiarity, strong community networks and direct contact with local actors. Interviewees described how small municipal scale and strong village identities create routine informal encounters and easy access to staff across departments. The document's reliance on neighborhood-based networks confirms this pattern.

Low-threshold participation practices appear in both the municipal plan and the interviews. The documents describe "Warmtecafés: laagdrempelige bijeenkomsten waarbij collega's of externe experts met inwoners in gesprek gaan" ("Heat cafés: low-threshold meetings where colleagues or external experts speak with residents") (Gemeente Boxtel, 2023, p. 34), and explain that resident input is "meegenomen in de verdere besluitvorming en het opstellen van beleid" ("taken into account in further decision-making and in drafting policy") (Gemeente Boxtel, 2023b, p. 34). This mirrors Buurkracht's interview descriptions of informal conversations, direct resident contact, and the municipality's openness to community-led suggestions. The documents also reference the warmtecafé in November 2022, after which the municipality increased digital communication based on resident feedback (Gemeente Boxtel, 2023, p. 35). This reflects the responsiveness and continuous adjustment noted in the interviews.

Finally, the documents highlight the municipality's learning-oriented working style. The programme states that Boxtel will "ervaring opdoen met deze middelen en activiteiten en bepalen wat het beste werkt" ("gain experience with these instruments and activities and determine what works best") (Gemeente Boxtel, 2023, p. 33) and aims to "ervaring opdoen met een wijkgerichte aanpak en deze door al doende te leren ontwikkelen" ("gain experience with a neighborhood-oriented approach and develop it through learning by doing") (Gemeente Boxtel, 2023, p. 36). This aligns with interview accounts of collaboration evolving through practical experience, including adjustments based on differences between neighborhoods and lessons learned over time.

5.2 Informal institutions in Leeuwarden

The case of Leeuwarden presents how collaboration between Buurkracht and the municipality functions in practice. The findings below combine results from paired interviews and document analysis to show how informal institutions are present in Leeuwarden.

5.2.1 Interview results Buurkracht Leeuwarden: informal institutions

Buurkracht describes cooperation in Leeuwarden as strongly shaped by informal expectations, interpersonal dynamics, and differences in working styles across municipal departments and neighborhood actors. According to the interview, formal agreements play a limited role in day-to-day collaboration. Buurkracht notes that contracts and formal arrangements are only referred to in steering groups or follow-up moments, while the practical work depends on continuous personal coordination within the neighborhoods.

According to the interview a central informal element concerns differing "glasses" through which departments view neighborhood work. Buurkracht explains that municipal staff in spatial planning often prioritize process requirements associated with democratic participation, while welfare and area teams approach neighborhoods from a caring perspective aimed at vulnerable households. These divergent viewpoints shape informal expectations in collaboration. Buurkracht reports needing to introduce a different mindset that centers on residents taking responsibility, and to align this perspective with colleagues who are accustomed to solving problems on behalf of residents.

The interview highlights that departmental culture influences cooperation. Buurkracht explains that civil servants are traditionally trained to think for residents rather than with them. This informal norm creates tension when Buurkracht attempts to work through resident-led processes. Buurkracht notes that municipal colleagues are initially critical of Buurkracht's methodology because it is unfamiliar, and that openness to this new approach depends on individual staff members rather than formal policy.

Interpersonal relationships play a decisive role in whether collaboration functions. Buurkracht states that cooperation depends on "who and where and when" within the municipality. In neighborhoods where Buurkracht "clicks" with area workers or community workers, coordination works smoothly. In places where this personal connection is absent, informal resistance arises, and collaboration becomes difficult. They describe several neighborhoods where individual municipal staff members opposed the approach, which delayed recruitment and required steering-committee intervention.

Informal trust-building between Buurkracht and municipal staff is described as essential. Buurkracht notes that collaboration cannot develop without a base level of personal trust, and that this takes time to establish. High turnover within the municipality complicates this because departing staff often take

knowledge and experience with them. The interview indicates that continuity improved once key figures joined the steering committee, creating clearer expectations and steadier contact points.

Buurkracht also reports that collaboration depends on individual "believers" within the municipal organization. These are staff members who see potential in the methodology and advocate for Buurkracht internally. The interview notes that such supporters are often found at operational and middle-management levels, while higher management tends to adopt a more pragmatic stance and waits to see whether the approach produces results. These informal dynamic shapes access resources and attention within the municipality.

Informal obstacles also occur due to behavior within the municipal organization. Buurkracht mentions that individual staff members who are unwilling or hesitant to cooperate can slow processes significantly. In one example, a municipal actor opposed the approach, which led to postponed recruitment and a delay that required steering-committee involvement. While Buurkracht believed that by working together they could have reached a compromise.

Finally, Buurkracht notes that the municipality in Leeuwarden maintains a cautious, "wait-and-see" attitude. The interview indicates that the municipality wants to give the project space but withholds full confidence until results become visible. This informal stance influences the pace of collaboration and requires Buurkracht to demonstrate progress through small steps before larger sustainability goals can be addressed.

5.2.2 Interview results municipality of Leeuwarden: informal institutions

The municipality describes informal collaboration with Buurkracht as shaped by an already crowded field of organizations, long-standing working routines in neighborhood teams, and the need for careful positioning among existing actors. According to the interview, Leeuwarden-East contains many ongoing projects and interventions. This influences how new initiatives are received and how cooperation unfolds in practice. The interviewee reports that informal coordination becomes essential because residents encounter multiple professionals with similar messages. In some neighborhoods, this led to confusion when Buurkracht and other organizations approached the same households at the same time.

Informal norms related to access and timing strongly influence cooperation. The interviewee explains that neighborhood-based work in Leeuwarden-East depends on choosing the right moment to connect to existing activities. Entering "too early" creates resistance among established partners, while entering "too late" results in overlap with processes that are already underway. These timing expectations are not formalized but are widely recognized among local actors. They structure how Buurkracht is expected to operate.

Relationships between Buurkracht and the municipality depends heavily on interpersonal chemistry. The interviewee notes that collaborations sometimes work smoothly when staff members "click," and become difficult when this informal dynamic is absent. In such cases, even well-intentioned coordination encounters friction. These interpersonal factors are not part of any official procedure but function as important informal conditions for cooperation.

The municipality notes that Buurkracht's flexible working style aligns with the informal experimental culture of the municipality in Leeuwarden-East. The area hosts multiple pilot initiatives in which strict procedures are temporarily set aside to evaluate new working methods. According to the interview,

Buurkracht fits into this environment because they can adapt to unexpected developments and adjust their approach based on local dynamics. This adaptability is considered an informal prerequisite for working in the area.

Finally, the interview highlights that informal collaboration also includes acknowledging when an initiative does not fit the local setting. In one part of Leeuwarden-East, Buurkracht withdrew because residents were encountering too many organizations and could no longer perceive differences between them. This decision was made through local consultation between both parties rather than through formal instructions.

5.2.3 Document analysis of Leeuwarden: informal institutions

The municipal planning documents corroborate the interview findings that collaboration in Leeuwarden is structured as neighborhood co-creation. The document states that "vanaf 2022 maken wij … per buurt een plan. Dat plan moet passen bij hoever de betreffende buurt is met de transitie. We doen dat steeds samen met de belanghebbenden uit die buurt" (Gemeente Leeuwarden, 2021, p. 37). Or "From 2022 onward we create a plan for each neighborhood. That plan must match the stage that the neighborhood has reached in the transition. We do this together with the stakeholders from that neighborhood" (Gemeente Leeuwarden, 2021, p. 37). This demonstrates an expectation that residents and local organizations contribute actively to neighborhood plans rather than receiving decisions from above. Substantiating the informal collaboration mentioned in the interviews.

Leeuwarden also embeds an informal norm of attentiveness through tailored communication. The HTV notes: "Per buurt wordt … een buurtplan opgesteld. Hiervoor zorgen wij voor communicatie op maat in overleg met verschillende lokale partijen. Hun inbreng is van groot belang om tot een doordacht, breed gedragen en realistisch plan te komen" (Gemeente Leeuwarden, 2021, p. 39). It further explains: "Met een buurtonderzoek willen we de inwoners van een buurt beter leren kennen. De communicatie is daar dan beter op af te stemmen" (Gemeente Leeuwarden, 2021, p. 39). "For each neighborhood, a neighborhood plan is drawn up. To do this we provide tailored communication in consultation with various local parties. Their input is essential for developing a well-considered, broadly supported and realistic plan" (Gemeente Leeuwarden, 2021, p. 39). It further explains: "With a neighborhood survey we want to get to know the residents of a neighborhood better. Communication can then be tailored more effectively" (Gemeente Leeuwarden, 2021, p. 39).

These passages highlight the informal expectation that outreach must be shaped around local knowledge and ongoing dialogue, aligning well with the approach Buurkracht described in the interview. Furthermore, inclusiveness and transparency form another informal norm in Leeuwarden's strategy. The document states that "iedereen de gelegenheid krijgt om mee te denken" and defines collaboration through the principle "Samenwerken… Iedereen moet kunnen meedenken en meedoen" (Gemeente Leeuwarden, 2021, p. 19, 37). Or "everyone is given the opportunity to contribute ideas" and it defines collaboration through the principle "Working together… Everyone must be able to participate in thinking and taking part" (Gemeente Leeuwarden, 2021, p. 19, 37). This indicates that resident participation is considered integral to the legitimacy of neighborhood plans.

The municipality also demonstrates an informal rule of accessibility through its Energieloket, described as "het belangrijkste aanspreekpunt om inwoners te helpen bij de verduurzaming" ("the main contact point for helping residents with sustainability improvements") (Gemeente Leeuwarden, 2021, p. 38). It also notes that "hier kunnen eigenaren informatie krijgen… Ook kan het Energieloket inzicht geven in

welke subsidies en financieringsmogelijkheden daarvoor bestaan" ("homeowners can obtain information here... The Energy Desk can also provide insight into which subsidies and financing options are available for this") (Gemeente Leeuwarden, 2021, p. 29). This establishes the expectation that residents should have an easy, low-threshold entry point for questions, advice and guidance, which Buurkracht described as one of their goals within Leeuwarden. Finally, the HTV points to an informal norm of ongoing interaction and learning. Residents are invited to "denk mee, praat mee" ("think along, talk along") through surveys, dialogue sessions and practical communication (Gemeente Leeuwarden, 2021, pp. 38–39). This reinforces the idea that the collaboration between the municipality and Buurkracht envisions communication is continuous and adaptive rather than static.

5.3 Informal institutions in Rotterdam

The case of Rotterdam presents how collaboration between Buurkracht and the municipality functions in practice. The findings below combine results from paired interviews and document analysis to display the most important informal institutions in the municipality of Rotterdam.

5.3.1 Interview results Buurkracht Rotterdam: informal institutions

Buurkracht describes informal collaboration in Rotterdam as shaped by interpersonal contact, changing communication lines, and the need to build trust through small, practical interactions. According to the interview, the cooperation relies on biweekly meetings with a single municipal contact person. These meetings function as the main informal coordination structure where updates, questions, observations from neighborhood supervisors, and small operational issues are exchanged.

Informal expectations around continuity and personal contact strongly influence the collaboration. Buurkracht explains that working with the same municipal contact throughout a project is preferable because communication becomes smoother when mutual familiarity is present. In Rotterdam, this continuity is disrupted by staff turnover. The interview notes that Buurkracht's first municipal contact left soon after the project started, and a new contact person had to take over. This change introduced a break in informal working routines and required time to rebuild familiarity.

Interpersonal trust is another informal condition shaping the work. The interview highlights that Buurkracht and the municipality "can discuss in confidence and openness what is going well and what is not," indicating that informal honesty and transparency are expected in the collaboration. This trust emerges from repeated exchanges rather than formal agreements.

Short communication lines are described as desirable but more difficult to achieve in Rotterdam. The interview indicates that cooperation depends on a limited number of individuals who know Buurkracht's work. Informally, this means that gaining access to the right person inside the municipality is essential. When these individuals change roles or leave the organization, informal communication must be rebuilt from the start.

The interview also identifies an informal rule regarding coordination with other parties. In Rotterdam, many initiatives operate simultaneously, and informal expectations exist to avoid duplication or conflicting approaches. Buurkracht reports that the municipality occasionally tips them about neighborhood initiatives that may be relevant, and they reciprocate with suggestions. This informal exchange helps prevent misalignment and supports complementary work.

5.3.2 Interview results municipality of Rotterdam: informal institutions

The interview shows that informal collaboration with Buurkracht in Rotterdam is shaped by personal contact, expectations of self-positioning in neighborhood structures, and routines built around frequent coordination. According to the municipality, open and direct communication is an implicit norm. They describe that meetings with Buurkracht every fourteen days have become the main channel for aligning activities, raising concerns, and monitoring neighborhood progress. These meetings replaced earlier periods where contact was sporadic and unpredictable. Which was seen as undesirable by the municipality as it gave them little overview of what was going on. The more regular rhythm is seen by the municipality as necessary for understanding Buurkracht's pace and identifying issues early.

Informal expectations about initiative and visibility strongly influence cooperation. Municipal staff explain that Buurkracht initially assumed that endorsement from the municipality was enough to gain entry in neighborhoods. The municipality clarifies that neighborhood teams, district managers and district networkers must first accept and recognize an external actor before cooperation becomes possible. This is not written down anywhere, but functions as an unwritten rule. According to the interview, Buurkracht had to "sell itself" to district teams, because the municipality does not introduce or vouch for intermediaries at the neighborhood level. Local acceptance depends on personal relationships and repeated presence rather than organizational mandates.

The municipality also describes an informal norm of "layered access." Officials state that Rotterdam's many organizational layers mean that internal knowledge about neighborhood ambassadors and key local actors sits with district teams, not with central departments. As a result, intermediaries are expected to proactively establish contact with the district teams before they can connect to local social structures. This extra step is viewed as normal practice in Rotterdam. The interview indicates that Buurkracht struggled with this because they had not been warned about it beforehand. The interview also described an environment in which Buurkracht needed to establish contact with multiple layers of this system in order to be successful.

Continuity of contact is another informal expectation. The officials mention that changes within Buurkracht (staff turnover, illness and shifts from junior to senior employees) disrupted collaboration. These changes required rebuilding informal relationships repeatedly. The municipality also acknowledges that turnover on their own side created similar obstacles and slowed the development of familiarity and trust.

The municipality describes an informal norm of mutual frankness once trust has been established. They mention that communication with Buurkracht is open and that concerns can be discussed "in confidence." This openness is not the result of procedures but of repeated interaction and the development of personal rapport through the biweekly meetings.

An additional informal rule concerns the expectation that Buurkracht escalates issues early when district teams do not engage. The municipality explains that Buurkracht did not alert them soon enough when neighborhood-level cooperation stalled. Municipal staff describe that part of the improvement plan now includes the rule that Buurkracht should "raise the alarm" if contact with a district team does not progress. This expectation is informal and arises from learning during the collaboration.

Finally, the interview shows that Rotterdam's neighborhood infrastructure indirectly shapes informal collaboration norms. District teams function as gatekeepers to local social structures and have long-standing networks that outsiders cannot bypass. The municipality explains that Buurkracht initially tried to navigate neighborhoods independently, but this was not effective because informal access to residents flows through district teams. As a result, the municipality now supports these efforts.

5.3.3 Document analysis of Rotterdam: informal institutions

The municipal documents confirm several informal working patterns described in the interviews with Rotterdam staff. The Raadsakkoord Energietransitie repeatedly emphasizes collaboration in "sterke coalities" ("strong coalitions") and the need for partners to act jointly rather than in separate tracks (Gemeente Rotterdam, 2021, p. 8). This aligns with the interview accounts in which municipal staff explained that external actors must position themselves within existing neighborhood structures and collaborate with district teams rather than operate independently.

Informal expectations of initiative and proactive communication also appear in the documents. The Raadsakkoord states that the municipality "eerlijk en open [wil] vertellen wat we doen en waarom we dit doen" ("wants to tell honestly and openly what we are doing and why we are doing it") (Gemeente Rotterdam, 2019, p. 8) and describes a working style based on "ruimte om te experimenteren" ("room to experiment") and "doen door te leren" ("doing by learning") (p. 2). These phrases match the interviews, where municipal staff highlighted the need for frank discussion during biweekly meetings, early signaling of problems and a flexible approach when neighborhood cooperation does not progress.

The documents also support the interview findings that collaboration in Rotterdam relies on repeated interaction rather than fixed procedures. The Rotterdams Klimaatakkoord reports that over 1 000 participants and more than 100 organizations contributed across "meer dan 50 bijeenkomsten" ("more than 50 meetings") (Gemeente Rotterdam, 2019, p. 4). This reflects the informal expectation mentioned in the interviews that alignment develops slowly through continuous meetings and personal familiarity, especially in a large municipal organization where trust must be built step by step.

A related pattern concerns the informal rule that partners are expected to contribute actively. The Klimaatakkoord states that climate work depends on "gezamenlijke inzet" ("joint effort") (Gemeente Rotterdam, 2019, p. 5) and rests on a broad "systematiek van participatie en samenwerking" ("system of participation and cooperation") (p. 32). This overlaps with interview statements that Buurkracht is expected to "sell itself" to district teams, take initiative in establishing contact and signal blockages early when cooperation in neighborhoods stalls.

The strong emphasis on experimentation and phased progress also confirms the interviews. Many climate deals in the Klimaatakkoord reference "pilots," "opschalen" ("scaling up") and "experimenten" ("experiments") (Gemeente Rotterdam, 2019, pp. 10–16). This corresponds to the interview accounts of Rotterdam's informal norm that actors should try small steps, adjust quickly and learn through practice, particularly when neighborhood teams hesitate or when personnel changes require rebuilding relationships.

Finally, the Raadsakkoord highlights an informal expectation of accessible engagement with residents: the municipality aims for "maximale betrokkenheid van en informatievoorziening aan inwoners" ("maximum involvement of and information provision to residents") (Gemeente Rotterdam, 2019, p. 2). This aligns with interview statements that neighborhood access depends on interpersonal trust,

introductions from district managers and informal visibility, rather than formal project announcements alone.

5.4 Informal institutions in Zaanstad

The case of Zaanstad illustrates how informal collaboration between Buurkracht and the municipality developed after a difficult start. The findings below combine the Buurkracht and municipal interviews and show how routines, interpersonal trust, and informal expectations shape cooperation in practice.

5.4.1 Interview results Buurkracht Zaanstad: informal institutions

Buurkracht describes informal cooperation in Zaanstad as strongly shaped by interpersonal contact, trust-building, and the role of key municipal actors. According to the interview, the early phase of collaboration was difficult because expected contact persons within the neighborhood network were reorganized, moved to other districts or deprioritized the project. This created uncertainty about whom to approach and resulted in limited turnout during early coordination sessions. Buurkracht refers to this as a major barrier because informal cooperation depends on stable, accessible contact points.

Informal expectations about municipal "belief" in the approach recur throughout the interview. Buurkracht explains that collaboration only works when certain individuals inside the municipality understand the value of resident-led processes and support Buurkracht's working method. These supportive individuals are described as "believers," and their involvement shapes access to neighborhood-level contacts. Without these internal champions, Buurkracht experiences hesitation, slow responses, or a lack of engagement.

Buurkracht reports that Zaanstad expects Buurkracht to identify, contact, and mobilize residents independently. Buurkracht explains that Buurkracht first created a roadmap and selected neighborhoods based on resident potential. These choices were later adjusted because municipal reorganization delayed input from district managers and neighborhood networkers. Informal coordination rules required Buurkracht to align its choices with local knowledge once the right contacts were available.

The interview also highlights informal expectations around autonomy and initiative. Buurkracht describes that Buurkracht must sometimes decide independently where to start when municipal partners are not yet engaged. He mentions that at one point Buurkracht proposed to "choose twelve neighborhoods and start," with the understanding that some would not succeed and would need to be replaced. This approach reflects an unwritten rule that movement is preferred over waiting for perfect alignment.

Informal trust-building is central in Zaanstad. Buurkracht reports that early progress was slow until frequent contact with municipal staff, particularly those familiar with neighborhood work, increased. According to Buurkracht, once district networkers observed visible neighborhood activity, such as new teams forming, greening initiatives or AED crowdfunding, they became more responsive. The improved responsiveness is described as informal proof that credibility had been earned through action rather than through formal agreements.

The interview describes a pattern in which progress accelerates once informal enthusiasm emerges among residents and municipal partners. Buurkracht notes that after the first neighborhood teams achieved results, district staff began to call Buurkracht back quickly, whereas earlier they had not prioritized the project. Small successes became informal signals to the municipality that the approach

was working, which increased willingness to cooperate. According to Buurkracht this was because visibility both for residents and the municipality is an integral part of getting started in a new place.

Finally, Buurkracht highlights that informal cooperation depends heavily on municipal staff who possess deep local knowledge. Buurkracht explains that district managers and district networkers help identify residents who can function as initiators and provide insight into local dynamics. When these contacts were unavailable due to reorganization, collaboration stalled. Once new contacts were engaged, Buurkracht reports that cooperation improved significantly.

5.4.2 Interview results municipality of Zaanstad: informal institutions

The municipality describes informal collaboration with Buurkracht as shaped by trust-building, internal coordination, and managing expectations within a complex organizational environment. According to the interview, the project began informally when a municipal colleague attended a Buurkracht presentation and expressed interest. This led to initial pilots in one or two neighborhoods, which later expanded after the BZK offer. The interview indicates that this step-by-step growth influenced expectations about alignment and workload.

Informal relations across departments influence how Buurkracht is received. The municipality notes that district managers function as gatekeepers to neighborhoods. They receive many requests from different departments and external actors, which creates "allergy" when new ideas enter their workflow. The municipality explains that gaining acceptance requires careful conversation, personal familiarity and time. The municipality states that this sensitivity was not fully understood at the start of the project and that it slowed cooperation.

The municipal worker also acts as an informal intermediary inside the municipal organization. They describe themselves as an "oilman" who checks in with colleagues when communication stalls or when neighborhood networkers report confusion. This informal troubleshooting role supports the collaboration and helps prevent prolonged misalignment.

The interview identifies an informal expectation that external partners must adapt to the rhythms of the neighborhood network. The municipality explains that district managers and local stakeholders must be consulted early to determine where resident potential exists. When this did not happen sufficiently in the first months, the resulting neighborhood selection process took longer than expected. The interview indicates that this mismatch contributed to delays and required additional informal coordination to resolve.

Informal expectations about regular communication are also present. The municipality explains that Buurkracht keeps them updated through weekly or biweekly contact. According to the municipality, this pattern works well: the municipality receives enough information to stay aligned but is not overloaded with small details, which matches informal expectations about workload.

Staff turnover on both sides is described as a significant informal challenge. The municipality notes that changes in Buurkracht's team and among district managers repeatedly disrupted relationship-building. They emphasize that trust develops slowly and that unfamiliar staff require time to build rapport with local actors. The interview also states that this instability contributed to practical delays.

Informal norms around bottom-up processes also shape the cooperation. The municipality confirms that Buurkracht's approach requires connecting to the energy you encounter in the neighborhood. The

municipality explains that many neighborhood teams begin with social or greening activities, and only later move toward sustainability topics. This informal sequence is accepted as normal inside the municipality.

Finally, the interview highlights that informal expectations about initiative and autonomy shape the collaboration. The municipality reports that Buurkracht is expected to propose solutions and keep the project moving, even when municipal processes slow down. At the same time, the municipality expects Buurkracht to escalate issues early when collaboration in a neighborhood halts. This balance between independence and early signaling has become an important part of the working relationship.

5.4.3 Document analysis of Zaanstad: informal institutions

The municipal documents confirm several informal working patterns described in the interviews with Zaanstad staff. Collaboration is consistently framed as a shared task between the municipality, residents, housing corporations and other partners. The document states that the HTV can only proceed "alleen door samen te werken" ("only by working together") (Gemeente Zaanstad, 2021, p. 4). This aligns with interview descriptions in which cooperation across organizations was presented as routine and expected.

The documents also show an informal expectation of early and broad involvement of local actors. The HTV explains that it was developed "met medewerking van haar partners" ("with the cooperation of its partners") (Gemeente Zaanstad, 2021, p. 4). It further notes that "woningcorporaties Parteon, ZVH, WormerWonen en Rochdale… en netbeheerder Liander hebben meegedacht" ("housing corporations Parteon, ZVH, WormerWonen and Rochdale… and grid operator Liander have contributed ideas") (Gemeente Zaanstad, 2021, p. 10). This corresponds to interview statements that Zaanstad expects partners to join planning processes early and contribute knowledge.

Informal rules of accessibility and support toward residents appear throughout the document. The plan introduces several low-threshold engagement tools such as energy coaches, warmtecafés, collective inkoopacties and the Duurzaam Bouwloket, described as offering "informatie en advies van het Duurzaam Bouwloket" ("information and advice from the Sustainable Building Desk") (Gemeente Zaanstad, 2021, p. 10). These elements reflect the interview descriptions of Zaanstad emphasizing approachable communication and accessible service structures.

The document also formalizes the expectation that progress must be clearly communicated. One of the guiding principles states that the municipality will "duidelijk onderbouwen waar, wanneer en hoe we aan de slag willen gaan" ("clearly substantiate where, when and how we want to start work") (Gemeente Zaanstad, 2021, p. 12). This corresponds to interview findings that residents and partners should receive concrete, understandable information.

The emphasis on neighborhood-based work confirms the interview findings on the centrality of wijkgericht collaboration. The plan repeatedly states that the transition proceeds "wijk voor wijk" ("neighborhoodby neighbourhood") (Gemeente Zaanstad, 2021, p. 5) and that Uitvoeringsplannen will be developed per neighborhood with involvement of "bewoners, overige gebouweigenaren en andere belanghebbenden" ("residents, other building owners and other stakeholders") (Gemeente Zaanstad, 2021, p. 8). This aligns with interview accounts describing neighborhood structures as the primary channel for access and cooperation.

The documents also show an informal expectation of long-term interaction and learning. The HTV states that the heating transition is "een proces van ervaring opdoen en leren in de eerste wijken" ("a process of gaining experience and learning in the first neighborhoods") (Gemeente Zaanstad, 2021, p. 29). Interviewees described similar expectations: that collaboration becomes more effective through repeated contact and practical experience.

Finally, the HTV highlights an informal rule of flexibility. It presents the document as "een dynamisch document" ("a dynamic document") that will be "eens in de vijf jaar herijkt" ("reassessed every five years") (Gemeente Zaanstad, 2021, p. 4). This supports interview statements that Zaanstad expects partners to adapt to changing conditions and treats adjustment as a normal part of collaboration.

5.5 Table of informal institutions results

Table 5 summarizes the informal rules and norms described above that shape collaboration between Buurkracht and each municipality. The table presents the main patterns reported in the interviews for both actors, followed by shared elements and differences. The overview shows how cooperation in each case is structured through informal communication. It is important to consider that the documents are not included in the table, since they confirm mostly the municipal side of the interviews. Therefore, these results are omitted from the table.

	Buurkracht	Municipality	Similarities	Differences
Boxtel and Sint-Michielsgestel	Personal ties	Personal ties	Frequent direct contact	Buurkracht stresses collegial feel; municipality stresses resident trust
	Dependent on stable municipal contacts	Trust built through small early actions	Trust built through small steps	Buurkracht experiences smooth access; municipality notes internal friction
	Long term vision	Vulnerability and approachability	Informal familiarity supports work	Municipality emphasizes feedback use; Buurkracht emphasizes presence
	Cooperation feels collegial because of small size	Internal cooperation and visibility		
		Feedback loops rely on initiative		
Leeuwarden	Collaboration depends on "clicks" and ''believers''	Crowded intermediary field can lead to coordination difficulties	Dependence on personal relations	Buurkracht highlights municipal skepticism; municipality highlights role clarity
	Openness is crucial	Access and timing are important	Need to fit existing structures	Buurkracht stresses mindset differences; municipality stresses timing and working styles
	Different "glasses" influence cooperation	Interpersonal chemistry	Crowds of actors complicates cooperation	Municipality frames withdrawal; Buurkracht frames conflict
	Differing attitudes can slow progress	Alignment of working styles		
	Trust is important for progress	Ability to pivot when needed can be essential		
Rotterdam	Interpersonal contact	Open and direct communication	Shared biweekly rhythm	Buurkracht sees size as barrier; municipality sees self-positioning as norm
	Short lines hard in large organization	Initiative and visibility are important	Focus on communication	Municipality expects escalation; Buurkracht expects facilitation

	Continuity of personnel and project	Continuity of personnel and project	Turnover disrupts continuity	Buurkracht focuses on resident trust; municipality on layered system
	Trust is essential	Layered access can be hard		
	Crowded intermediary field	Feedback loops		
Zaanstad	Interpersonal contact	Interpersonal contact	Both rely on district managers	Buurkracht stresses unclear contacts; municipality stresses overload
	Continuity of personnel and project	Continuity of personnel and project	Both depend on internal municipal coordination	Buurkracht shifts quickly; municipality stresses alignment
	Trust is crucial	"Oilman" role resolves friction	Both see turnover as disruptive	Municipality troubleshoots; Buurkracht builds visibility
	Important of local knowledge	Important of local knowledge		
	Importance of informal coordination	Initiative and authority		

Table 5. Table of informal institutions results.

5.5.1 Commonalities and differences in informal institutions

Table 5 summarizes the informal rules and routines that shape how Buurkracht and the municipalities work together. The table presents the main interview findings for each actor and shows the shared elements and the differences that appear in each municipality. These informal factors influence how contact is maintained, how cooperation develops and how day-to-day decisions are handled. The following paragraphs describe the common informal patterns and the differences that occur across the four municipalities as they were mentioned in the interviews.

Common informal-institution patterns in Table 5:

- A first shared pattern is the central role of interpersonal contact. In every municipality, both Buurkracht and municipal staff describe that cooperation relies on personal ties, stable contact persons and repeated presence. Trust is named in all cases as necessary for maintaining progress. When contact persons change, continuity reduces and follow-up slows.
- A second pattern is the need for clear access points. Across municipalities, interviewees report that collaboration works best when entry routes into the organization are known and roles are clear. When access is unclear or many actors are involved, coordination becomes more difficult. This applies in both small and large municipalities.
- A third pattern concerns the alignment of working styles. Cooperation depends on matching expectations, timing and communication rhythms. Differences in approach or interpretation can delay progress. This appears in different forms: "different glasses" in Leeuwarden, layered access in Rotterdam and reorganization effects in Zaanstad.
- A fourth recurring pattern is reliance on informal coordination. Interviews across all municipalities describe short lines, direct calls, and informal adjustments made through ongoing contact. This remains central even in larger organizations where formal structures exist.
- A final shared pattern is the importance of local knowledge. Interviewees consistently refer to neighborhood dynamics, key community figures and the need to understand local conditions.

Local knowledge shapes how quickly relationships are established and how effectively neighborhood teams can be developed.

Differences in informal institutions across municipalities in Table 5:

- The first difference concerns how personal ties are used. In Boxtel and Sint-Michielsgestel, both actors describe smooth access and collegial contact, while the municipality emphasizes trust with residents. In Leeuwarden, cooperation depends on interpersonal "clicks," and differences in working styles are more visible. In Rotterdam, personal contact is harder to maintain due to organizational size. In Zaanstad, contact depends strongly on district managers and varies widely across neighborhoods.
- A second difference involves access to internal structures. Boxtel and Sint-Michielsgestel report accessible contact points. Leeuwarden notes the need to fit into existing structures. Rotterdam describes layered access and late involvement of district teams. Zaanstad reports unclear contact points after reorganization and differences in district-manager engagement.
- A third difference concerns working-style alignment. In Boxtel and Sint-Michielsgestel, working styles align more easily. In Leeuwarden, interviewees mention skepticism, mindset differences and the need for clear role division. Rotterdam highlights mismatches in expectations between Buurkracht and the municipality. Zaanstad notes timing issues and rapid shifts linked to reorganization.
- A fourth difference relates to informal coordination. Boxtel and Sint-Michielsgestel rely heavily on informal familiarity. Leeuwarden reports that informal coordination helps but is complicated by many actors. Rotterdam notes that informal coordination is important but challenged by organization size. Zaanstad describes reliance on district managers as key but notes overload in some districts.
- A final difference appears in the use of local knowledge. In Boxtel and Sint-Michielsgestel, local knowledge is stable and easy to access. Leeuwarden reports dependence on existing social structures and strong variation across areas. Rotterdam notes that many overlapping initiatives make it harder to understand neighborhood dynamics. Zaanstad reports loss of local spatial knowledge after reorganization and differing expectations about which neighborhoods will respond.

Taken together, Table 5 shows that municipalities share several informal-institution patterns but differ in how interpersonal contact, internal access, working styles and local knowledge shape cooperation. These differences help explain the variation in how collaboration develops in each municipality and link directly to the patterns described in the next chapter.

5.6 Answering sub-question 2

The interviews show that the collaboration between Buurkracht and the municipalities is guided by recurring informal rules and routines. These practices differ by municipality but follow similar patterns in how contact is maintained, how neighborhood access is organized and how day-to-day coordination takes place. Table 5 summarizes these patterns. Below, the informal rules and norms that shape the collaboration are described for each municipality and finally the sub-question is answered.

Boxtel and Sint-Michielsgestel: In Boxtel and Sint-Michielsgestel, collaboration is shaped by short and direct contact lines and by open, approachable communication. Buurkracht works with stable contact

persons, uses informal coordination and experiences the relationship as collegial. The municipality feels that trust is built through small early actions, uses informal outreach and relies on personal relations inside the organization. Both actors depend on frequent direct contact and informal familiarity. Differences arise because Buurkracht emphasizes collegial cooperation and smooth internal access, while the municipality highlights resident trust, internal friction and the expectation that Buurkracht responds to informal feedback.

Leeuwarden: In Leeuwarden, collaboration depends on interpersonal "clicks," the presence of many intermediaries and differences in departmental working styles. The municipality works with neighborhood teams and welfare actors who function as informal gatekeepers, and collaboration is influenced by informal hierarchies and the timing of entry into neighborhood processes. Both actors rely on personal relations, the need to fit existing structures and the challenge of a crowded field of actors. Differences appear because Buurkracht highlights municipal skepticism and mindset differences, while the municipality emphasizes role clarity, timing and the need to avoid overlapping activities.

Rotterdam: In Rotterdam, collaboration is structured around biweekly coordination meetings and the use of key municipal contact persons. Buurkracht experiences short communication lines as difficult in a large organization and relies on their own methods for access to neighborhoods The municipality expects Buurkracht to position itself within district networks, does not provide formal introductions and requires early signaling when collaboration stalls. Both meet with a biweekly rhythm, depending on district teams as gatekeepers and note that turnover disrupts continuity. Differences arise because Buurkracht views municipal scale as a barrier, while the municipality sees self-positioning and early escalation as standard practice.

Zaanstad: In Zaanstad, collaboration is shaped by unclear contacts in the early phase on the side of Buurkracht and by strong gatekeeping roles for district managers. Buurkracht depends on internal supporters, works ahead when municipal input is delayed, builds credibility through visible results and shifts focus when neighborhood energy is low. The municipality experiences workload sensitivity uses an informal "oilman" role to resolve friction and expects partners to follow the rhythms of neighborhood networks. Both actors' internal coordination in the municipality and describe turnover as disruptive. Differences arise because Buurkracht stresses unclear initial contact points and quick shifts, while the municipality emphasizes overload, early alignment and troubleshooting.

In answer to the sub-question: *Which informal rules and norms shape the collaboration between Buurkracht and the municipalities?* the collaboration between Buurkracht and the municipalities is shaped by informal rules that involve short personal contact lines, gatekeeping roles in neighborhood structures, and practical routines such as small early actions, ongoing adjustment and early signaling when cooperation slows. These informal practices explain how collaboration is conducted in each municipality. However, the informal institutions also show considerable differences in how they work in each municipality. For example, Boxtel and Sint-Michielsgestel function very differently than Rotterdam while they both mention that size plays in role in their respective municipality. Therefore, chapter 6 will further explore this, by looking at the contextual factors that influence the collaboration between Buurkracht and the four municipalities.

6. Contextual factors

With the results of the formal rules in Chapter 4 and the informal norms in Chapter 5 defined, this chapter builds on those results by examining the contextual conditions in which collaboration takes place. The literature review identified four factors that shape how collaboration unfolds in practice: spatial, social, political, and economic conditions. These factors influence participation, local networks, administrative routines, and the practical room to act. This chapter presents the contextual factors that shape collaboration. The structure follows the method described in Chapter 3.6.1: Buurkracht interview results, municipal interview results, then document findings. This order reflects the paired-interview design and keeps the voices of both actors separate. A comparative table and a short conclusion complete the chapter. Interpretation appears in Chapter 8.

6.1 Context in Boxtel and Sint-Michielsgestel

This section presents the results from Boxtel and Sint-Michielsgestel. These findings describe what interviewees and documents reported about the environments in which collaboration takes place. The results are structured by factor.

6.1.1 Interview Buurkracht contextual factors Boxtel and Sint-Michielsgestel

Spatial context: The interviewee described the municipalities as a collection of separate villages, each with its own identity. Residents identify with their own village rather than with the larger municipal unit. These boundaries shape how Buurkracht enters neighborhoods and how neighborhood teams are formed. The interviewee also said that the fragmented layout makes larger heating solutions impossible. A collective system such as a heating network cannot be developed because the villages are small, dispersed, and structurally different. Work therefore concentrates on village-level engagement rather than large-scale technical options. Each of the villages is described as a different neighborhood with distinct spatial features.

Social context: Buurkracht said that villages differ in social cohesion and accessibility for Buurkracht. Some have strong internal networks and established routines, which makes external engagement difficult. One village did not open up despite repeated attempts, leading to a shift in focus to areas where residents wanted to participate. In other villages, existing cohesion supported the formation of neighborhood teams. More neighborhood teams formed in Boxtel than in Sint-Michielsgestel. Important to consider is that Buurkracht mentioned that once they were are able to connect with these existing social structures, they were able to get things done quickly and easy. They describe this as the fragmented villages each having their own culture and that adaptation to these different cultures and winning their trust is essential.

Political: The municipal organization is small, with short communication lines and easy access to staff across different departments. Long-term contact persons helped create continuity in the collaboration. The coordinator also observed that not all departments respond to resident initiatives in the same way, with some departments being more cautious than others.

Economic context: Buurkracht mentions that most neighborhoods consist of residents with stable incomes. Only a few areas experience financial pressure. Economic concerns play a smaller role here than in larger cities. According to Buurkracht this municipality has a homogenous economic municipality, with mostly working families.

6.1.2 Interview Buurkracht contextual factors Boxtel and Sint-Michielsgestel

Spatial context: The interviewee described the municipalities as small and easy to oversee. The limited geographical scale makes it possible to reach neighborhoods quickly and maintain contact with local groups. The interviewee noted clear differences between neighborhoods or villages in housing types and building years, making uniform approaches harder. Some areas consist of recent construction, while others include older housing with more insulation potential. The interviewee said that dispersal of villages limits options for large collective heating systems. Rest-heat sources or large network solutions are difficult to connect across villages.

Social context: The interviewee described a strong local culture of community involvement. Residents take part in associations and events, and new residents often join local groups. This social environment supports collective activities and neighborhood engagement. The interviewee reported that social cohesion differs per village. Some places have active networks that respond quickly, while others require more time to reach. The interviewee said that the two municipalities have a tradition of volunteer work and local initiatives, which provides a starting point for forming neighborhood teams.

Political: The municipal organization is small. The interviewee reported short communication lines and direct access to colleagues across departments. The interviewee said that cooperation between departments can be difficult because teams have different routines and priorities. Some departments respond more cautiously to residents' ideas than others. The interviewee also described internal discussions about participation because the organization is still working out how to align new participation tasks with existing procedures. The interviewee stated that national participation rules are present but not yet consistently embedded in local routines. According to the interview the political climate is stable, making long term plans a little easier.

Economic context: The interviewee described the municipalities as having many owner-occupied homes and few social-rental or private-rental dwellings. Most residents can invest in small measures but hesitate when measures become expensive. Income levels differ per neighborhood, but overall energy affordability is less prominent here. The interviewee said that costs of measures influence choices made by residents and can slow the uptake of energy measures.

6.1.3 Document analysis contextual factors Boxtel and Sint-Michielsgestel

Spatial context: The documents describe Boxtel and Sint Michielsgestel as municipalities with dispersed settlement patterns and low building density. Most neighborhoods consist of separate villages with significant distance between them. The HTV (2021) and Uitvoeringsprogramma (2023) note that this spatial structure limits the development of collective heating systems (Gemeente Boxtel 2021, 2023). Only a few areas with higher density such as Boxtel meet the conditions for a potential district heating system. The Uitvoeringsprogramma (2023) notes that neighborhood characteristics, housing types and local initiatives shape the feasibility and expected timing of certain actions. Therefore the municipality says that most neighborhoods require individual or small scale solutions, the municipality focuses on house level measures and tailored communication per village, confirming the findings of the interviews (Gemeente Boxtel 2021, 2023).

Social context: The documents state that many residents are homeowners and that neighborhoods differ in levels of participation (Gemeente Boxtel 2021, 2023). Local associations and community groups are described as important access points for communication. Participation levels vary, which means some villages require additional engagement. The municipality uses local channels such as

village newsletters, online platforms, heat cafés, and energy coaches to reach residents (Gemeente Boxtel 2021, 2023). These social characteristics influence collaboration because municipal outreach strategies depend on the existing village networks, and Buurkracht's neighborhood approach needs to match the communication channels outlined in the plans (Gemeente Boxtel 2021, 2023).

Political: The documents name the municipality as holding a coordinating role in the heating transition (Gemeente Boxtel 2021, 2023). Tasks include informing residents, facilitating partners, and preparing neighborhood plans. The HTV and Uitvoeringsprogramma also note internal capacity limits and the need for cooperation across municipal departments. Collaboration with JOOST, Brabant Woont Slim, networks in the RES region, and other local actors is described as part of the political structure. These elements shape the collaboration with Buurkracht by clarifying that the municipality leads strategic coordination while relying on external partners for resident outreach and operational tasks(Gemeente Boxtel 2021, 2023).

Economic context: The documents outline that most homes are owner-occupied and that residents make their own investment decisions (Gemeente Boxtel 2021, 2023). They present estimated costs for insulation and heating installations and list subsidies and loan options. Differences in affordability between neighborhoods are identified based on social economic factors like housing type and average income, with a focus on supporting EFG-label homes and lowering energy expenses (Gemeente Boxtel 2021, 2023). These economic factors influence collaboration because both actors need to align their work with neighborhoods where financial conditions and subsidy options affect resident willingness to participate in measures (Gemeente Boxtel 2021, 2023).

6.2 Context in Leeuwarden

This section presents the results from Leeuwarden. These findings describe what interviewees and documents reported about the environments in which collaboration takes place. The results are structured per factor.

6.2.1 Interview Buurkracht contextual factors Leeuwarden

Spatial context: The interviewee described that many selected neighborhoods contain different housing types making one fit for all solution harder. Such spatial conditions made it harder to enter neighborhoods and slowed the start of the collaboration. Additionally, these spatially fragmented neighborhoods often have the least advanced heating solutions and therefore already host other programs, such as Leeuwarden Oost, which created overlap and competition for resident attention and implementation of new heating solutions for the older houses. According to the interview, this overlap is especially prevalent in areas with specific spatial conditions, like an older housing stock, different types of houses and vague neighborhood borders. Buurkracht also mentioned that these spatial factors made it difficult to build new teams and required more coordination with community workers.

Social context: Low trust and fragmented social networks had a direct impact on cooperation with the municipality, and many parts of the city contain vulnerable households, mixed nationalities and existing distrust toward the municipality. The interviewee reported that in many neighborhoods residents did not respond to municipal outreach. Existing networks were described as dominated by talkers rather than doers, which made it difficult to build neighborhood teams that aligned with the project goals. Cooperation with area workers varies per person and dependent on their preferences and could also constrain progress. When the area worker supported the approach, collaboration progressed; when

this support was absent, Buurkracht experienced continuous resistance. Therefore, Buurkracht views social fragmentation and low trust as a difficulty when entering specific neighborhoods in Leeuwarden.

Political context: Internal culture at the municipality influenced collaboration strongly. The interviewee said that one key municipal contact did not support the project, which delayed recruitment and slowed the collaboration. Differences between departments also affected cooperation. Some departments approached neighborhoods from a democratic participation perspective, others from a care-oriented perspective.

Economic context: Many neighborhoods experience financial pressure, with Leeuwarden Oost being one of the poorest regions in the entire country. According to the interviewee, this made it harder for residents to engage with new initiatives, which influenced the pace of collaboration. Existing subsidy schemes and previous programs in these neighborhoods created confusion about what the municipality or other actors offered. Buurkracht reported that economic concerns forced them to prioritize trust-building and small activities before sustainability topics could be introduced. This shaped how collaboration with the municipality was organized, because both parties had to adjust expectations and timelines in financially vulnerable areas. While this was true for some areas in Leeuwarden-Oost, Buurkracht also mentioned that in other areas which were economically better off, progress was faster and contact was easier to establish.

6.2.2 Interview municipality contextual factors Leeuwarden

Spatial context: The interviewee of the municipality of Leeuwarden described clear spatial differences within the municipality. Leeuwarden Oost consists of five dense urban neighborhoods with overlapping initiatives and limited physical separation between programs. This concentration of activity in areas with a high building density and often older housing stock makes it harder to give Buurkracht a distinct place, because multiple actors operate in the same physical streets and blocks. The interviewee said that residents sometimes receive repeated visits or materials from different organizations working in the same area, which affects how Buurkracht can collaborate with the municipality. In contrast, the villages and middle class neighborhoods outside the city have a more spacious layout and fewer active programs. These areas contain clearer physical boundaries and more stable settings. According to the interviewee, this makes it easier to assign Buurkracht a defined entry point and reduces the chance that work overlaps with other actors. Spatial separation between villages and the city therefore influences the ease of coordination and the clarity of roles in the collaboration.

Social context: The interviewee described Leeuwarden-Oost as an area with many vulnerable households, high dependency on government support and long standing distrust towards institutions. These social conditions shape the collaboration because residents respond differently to outreach from the municipality and Buurkracht. In some neighborhoods residents quickly become confused when multiple organizations contact them. The interviewee explained that existing social networks often revolve around a fixed group of active residents, while the groups Buurkracht aims to reach already engage with municipal programs. This limits entry points for cooperation. The interviewee also said that the chemistry between Buurkracht staff, welfare organizations and existing social neighborhood structures influences how access to residents develops, because these actors hold long term relations with residents.

Political context: The interviewee described the municipality as working in an experimental way in Leeuwarden Oost, with many ongoing pilots and programs. This creates both room for new approaches

and friction with existing routines. Collaboration with Buurkracht is influenced by the need to coordinate with neighborhood teams, welfare organizations, housing associations and multiple municipal project groups. The interviewee noted that the level of organizational pressure and activity makes it difficult for Buurkracht to define its position. The interviewee also highlighted that in Leeuwarden, the municipal culture strives to be inclusive and maintain a style of no one left behind.

Economic context: The interviewee described that many neighborhoods in Leeuwarden Oost face economic strain. Households depend on benefits and have limited financial capacity to invest. This shapes collaboration because residents are cautious when approached by new organizations and often prioritize immediate concerns over long term measures. The interviewee said that economic pressure and the presence of many subsidy schemes create confusion about who offers what. In neighborhoods outside Leeuwarden Oost, where incomes are higher and financial strain is lower, collaboration with Buurkracht develops more easily because residents have clearer action perspectives and fewer overlapping programs compete for attention.

6.2.3 Document analysis of contextual factors Leeuwarden

Spatial context: The HTV describes Leeuwarden as a municipality with strong contrasts between dense urban neighborhoods and surrounding villages. Leeuwarden Oost contains many apartment blocks, mixed housing types and closely built areas. These conditions lead to concentration of activity because multiple programs operate in the same physical space. This affects collaboration because outreach from different actors often overlaps and residents receive repeated information from various sources. In villages and less dense areas the spatial layout is calmer, and neighborhood boundaries are clearer. This allows the municipality and partners to define roles more easily and reduces the chance that several actors work in the same streets at the same time.

Social context: The documents identify many differences between neighborhoods in high levels of vulnerability, low trust and limited financial resilience. Energy poverty is common in several areas and the HTV highlights households that face difficulty paying energy bills or investing in measures, live in the socially diverse Leeuwarden Oost. The documents also indicate differences in the level of social organization. Some neighborhoods have active collectives or energy cooperatives, which provide access points for engagement. Others require more tailored communication and longer preparation.

Political context: The HTV shows that Leeuwarden has multiple governance layers interacting in the heating transition. It describes that the municipality holds a coordinating role and must work with housing associations, welfare organizations, energy cooperatives and regional partners. The documents also describe the presence of many parallel pilots in Leeuwarden Oost. This affects collaboration because new initiatives must align with existing program structures and neighborhood plans. The municipality highlights limited organizational capacity and notes that the number of ongoing projects requires careful sequencing. These conditions determine how quickly collaboration with external partners such as Buurkracht can be arranged and how responsibilities are divided.

Economic context: The documents describe large economic differences across neighborhoods. Areas in Leeuwarden Oost face structural financial pressure and limited investment capacity. The HTV states that affordability is central to the transition, with energy poverty identified as a key concern. Subsidy schemes, loan options and large investment programs are used to support neighborhoods with low financial resilience. These factors shape collaboration because outreach and planning must correspond to the financial conditions of each neighborhood. Areas with higher income levels outside the city allow

for faster progress, while vulnerable neighborhoods require more time, coordination and supportive measures.

6.3 Context in Rotterdam

This section presents the results from the city of Rotterdam. These findings describe what interviewees and documents reported about the environments in which collaboration takes place. The results are structed per factor.

6.3.1 Interview Buurkracht contextual factors Rotterdam

Spatial context: The interviewee described Rotterdam as a very large city with many different neighborhoods. Each neighborhood has its own layout, density and local building conditions like building year and maintenance state. These spatial differences influence how Buurkracht works because the needs and entry points differ per area. The size of the municipality makes it harder to establish a clear presence across all neighborhoods. Buurkracht attributed this not only to the size of the entire municipality, but also the size of the different neighborhoods, which are often large and in size.

Social context: The interviewee explained that neighborhoods differ in resident priorities. In some areas residents focus on issues such as safety or local nuisances before sustainability. This shapes how quickly residents respond to Buurkracht entering a neighborhood. In other areas residents are already active and show interest in collective actions, such as green projects. The interviewee said that neighborhood responses vary widely. In some neighborhoods outreach resulted in little to no results, which made forming a neighborhood team difficult. In other neighborhoods small groups were found that could start working together. Support from district managers and district councils helps identify local contacts. They also mention that if there already is a social structure in place these, it was sometimes hard to find but could be very valuable in reaching specific targets or in forming neighborhood teams.

Political context: The interviewee described Rotterdam as an organization with many departments and separate project teams. This scale affects the collaboration because Buurkracht cannot reach all relevant units directly. Contacts change regularly, which influences continuity. The interviewee reported that it is not possible for Buurkracht to become known across the entire municipal organization due to its size. The interviewee also noted that Buurkracht encounters many other municipal initiatives in the same area, which requires coordination with different departments. Access to neighborhoods depends on district teams, and these teams do not always know Buurkracht at the start of a project. It was also mentioned that because of the number of people within the municipality and the number of people living in Rotterdam, it was sometimes hard to include all perspectives.

Economic context: The interviewee explained that financial concerns vary by neighborhood, but Buurkracht does not manage subsidies or financial arrangements directly. The municipality informs Buurkracht about existing schemes, but there is no separate budget for Buurkracht activities. Economic concerns influence resident interest in sustainability, but the interviewee stated that neighborhood supervisors focus first on identifying available schemes and only point residents to these options. Differences in neighborhood income levels influence how quickly residents participate, but these conditions differ in the neighborhood and do not follow a clear pattern. Because the project had a slower start in Rotterdam and some neighborhoods were harder to contact, Buurkracht mentioned that the economic context is less important

6.3.2 Interview municipality contextual factors Rotterdam

Spatial context: The interviewees described Rotterdam as a large city with many separate neighborhoods. This size influences collaboration because Buurkracht cannot reach neighborhoods directly, because of the many layers of a neighborhood. According to the municipality, overcoming the size problems could be done by contacting the district teams, as they serve as the primary access point. The interviewees said it took considerable effort for Buurkracht to connect with these teams. The interviewees stated that distance or housing type did not predict success. They noted that difficult and easy neighborhoods occurred across the entire city. The municipality also noted that within neighborhoods there was a lot of variation, giving an example of two streets which were located almost next to each other. In one, a similar initiative worked while in the other it did not. Therefore, they mention that spatial factors can be important but currently are not that important.

Social context: The interviewees described Rotterdam as socially diverse, with many active groups, community centers and informal networks already present. These existing structures shape collaboration because they determine who residents already know and trust. The interviewees explained that Buurkracht first had to "sell itself" to district teams, who know which groups are active and which contacts matter. The interviewees said that neighborhoods with strong resident groups were not automatically easier to work with, and that some areas responded well, while others did not show interest. They also noted that these differences were not linked to income or neighborhood status. However, some neighborhoods with difficult or complex social structures could complicate contacting the right people, according to the interview.

Political context: The interviewees emphasized the complexity of Rotterdam's layered structure. Many layers exist between central departments and neighborhood teams. This structure shapes collaboration because Buurkracht must work through multiple officials to enter neighborhoods. The interviewees noted that district teams were not informed when Buurkracht was contracted, which caused delays. Furthermore, Buurkracht could have kept the municipality better informed and thereby worked through the larder size of the municipal organization. The size of the municipal organization and the number of actors involved were described as important contextual conditions, which led to delays in some parts of the project.

Economic context: The interviewees explained that economic conditions in the city do not predict where Buurkracht can be successful. They expected that affluent areas would be easier and vulnerable areas harder, but this did not match their experience. They said that some wealthier areas showed little interest, while some vulnerable areas responded better. Subsidy programs and financial arrangements exist through other municipal units, but these are not part of Buurkracht's direct responsibilities. Economic variation is a background factor, but it did not explain neighborhood differences in involvement.

6.4.3 Document analysis contextual factors Rotterdam

Spatial context: The documents describe Rotterdam as a dense and heterogeneous urban area with strong neighborhood differences. The Raadsakkoord highlights that the built environment varies significantly across districts and that neighborhoods require their own transition routes (Gemeente Rotterdam 2021). The Klimaatakkoord notes that the changes to homes and public space are substantial and must be approached per neighborhood (Gemeente Rottedam 2019). The HTV and

linked neighborhood information classify districts by technical options and timelines, which shapes how collaboration must be organized at area level (Gemeente Rotterdam 2022).

Social context: The Klimaatakkoord identifies large social variations across neighborhoods. It states that residents experience the transition differently and emphasizes the need for accessible communication and involvement of local groups. The Raadsakkoord notes that affordability and preventing energy poverty are guiding principles for municipal action. These social differences influence collaboration because neighborhoods require tailored support and communication strategies (Gemeente Rotterdam, 2019; Gemeente Rotterdam, 2022).

Political and administrative context: The Raadsakkoord outlines the municipal commitment to national climate goals and identifies clear decision-making principles such as CO_2 reduction, affordability and long term consistency (Gemeente Rottedam 2019). The Klimaatakkoord sets out a governance structure with climate tables, climate deals and cooperation with companies, housing associations and civil society. The municipal planning documents show that the heating transition is coordinated through neighborhood plans and cross-sector programs (Gemeente Rottedam 2019). These structures define the administrative context in which other actors collaborate with the municipality (Gemeente Rotterdam, 2019; Gemeente Rotterdam, 2022; Gemeente Rotterdam, 2023).

Economic context: The Raadsakkoord highlights energy poverty as a central challenge and notes the need for municipal support to help residents invest in measures Gemeente Rottedam, 2019). The Klimaatakkoord frames the transition as both a cost-intensive task and an economic opportunity with new jobs in construction, energy and infrastructure. The HTV materials show that large investments in infrastructure and heating systems are required and that financing must align across municipal and national levels. These economic conditions shape the background for collaboration at neighborhood scale (Gemeente Rotterdam, 2019; Gemeente Rotterdam, 2022).

6.4 Context in Zaanstad

This section presents the results from the city of Rotterdam. These findings describe what interviewees and documents reported about the environments in which collaboration takes place. The results are structed per factor.

6.4.1 Interview Buurkracht contextual factors Zaanstad
Spatial context: The interview described Zaanstad as a municipality with many neighborhoods involved with the BZK-12 project spread across the city. This physical spread requires clear choices about where to start, because working everywhere at once is not feasible. Normally, Buurkracht develops the neighborhood roadmap together with district managers and neighborhood networkers, since they know which areas have local energy and which do not. In Zaanstad this was disrupted because the neighborhood network was reorganized at the same moment. District managers moved to other areas, and the people with local knowledge were no longer the same. This made it difficult to determine which neighborhoods were suitable to begin with. As a result, the interviewee narrowed the focus, when a neighborhood did not open up, Buurkracht moved to another area rather than continue for months without progress. During this process, they described that for choosing a neighborhood, spatial factors like housing type and spread were used to determine where to continue with the project.

Social context: The interviewee explained that social conditions differ in neighborhood and need to be studied in order to be properly dealt with. Therefore, they said that collaboration depends on identifying residents who show early initiative, since these people help form the neighborhood teams. The interviewee said that identifying "first initiators" was essential for understanding whether a neighborhood had enough momentum. In some neighborhoods two groups emerged, each focusing on different topics such as greening or social activities. Dealing with such social dilemmas was important according to the interview.

Political context: The interviewee said that the reorganization of the neighborhood structure shaped the collaboration. District managers and neighborhood networkers normally guide the roadmap and support access to residents. When these roles changed or moved, Buurkracht temporarily lost its municipal entry point. The sustainability department later re-engaged and supported Buurkracht in determining the final set of neighborhoods. Collaboration improved once the responsible actors were stable again. The interviewee described this administrative transition as the main factor shaping the early phase of work in Zaanstad.

Economic context: The interviewee did not describe specific economic differences between neighborhoods as a factor in Zaanstad. The interview focused on social energy and the presence of residents willing to participate rather than financial conditions. Economic variation was not mentioned as a key influence on the collaboration.

6.4.2 Interview municipality contextual factors Zaanstad

Spatial context: The interviewee described Zaanstad as a municipality with a wide range of different kinds of neighborhoods spread across the city. This physical difference influences collaboration because each area has different housing challenges and organizational structures. The interviewee noted that Zaanstad has major issues with subsiding foundations that work on renewing older housing stock with older heating facilities, which affects many neighborhoods and requires significant municipal attention. This adds pressure on available capacity and influences how much support neighborhood initiatives receive.

Social context: The interviewee described Zaanstad as socially varied, with neighborhoods differing in resident initiative and existing groups. The interviewee said that the presence of active residents is essential because neighborhood teams must be built around people who want to do something together. In practice, responses varied: in some neighborhoods teams developed around topics such as AEDs, greenery, waste or sustainability, while in others no initiative emerged. The interviewee said that some expected "promising" neighborhoods failed to produce a team, while other neighborhoods unexpectedly developed initiatives. Early meetings with local stakeholders had low attendance, which made it difficult to identify social energy in specific areas. Therefore, working with existing social structures was deemed very important by the municipality.

Political context: The interviewee described Zaanstad's political context as a key factor in collaboration. Zaanstad relies strongly on district managers as the link between the municipality and residents. District managers function as central access points for initiatives and are frequently asked by multiple departments to manage various tasks. The interviewee said this creates "allergy" among district managers when new projects appear. This dynamic influenced how Buurkracht could be positioned. The project also expanded quickly from a small idea into a BZK-funded program covering twelve neighborhoods, requiring support from more departments and the alderman. Internal coordination

challenges slowed the initial phase, and district management was not involved early enough in neighborhood selection. The interviewee also emphasized that Zaanstad depends on national subsidies, which come with conditions that influence local choices. Organizational capacity constraints, cutbacks and affected continuity. These contextual political features shaped the timing and scope of the collaboration.

Economic context: The interviewee described Zaanstad as not a rich municipality and dependent on national funding streams. Financial constraints influence which neighborhoods can be included and how intensively they can be supported. According to the interviewee, one neighborhood with stronger socio economic conditions produced a team, but the municipality did not test Buurkracht in more vulnerable areas because these areas already received significant attention from other programs. They explained that working in such neighborhoods would require consistent presence over multiple years, which was not feasible within available financial resources. The interviewee therefore stated that economic factors shape collaboration indirectly through funding limitations, subsidy conditions and capacity constraints, rather than through resident income differences within the neighborhoods themselves.

6.4.3 Document analysis contextual factors Zaanstad
Spatial context: The HTV describes Zaanstad as a municipality with mixed spatial characteristics. Parts of Zaandam, have a dense, urban structure, while other areas contain older neighborhoods and industrial zones. These spatial differences lead to distinct technical options per area. High density areas are considered suitable for district heating, while historical ribbon developments and older low density neighborhoods are marked as locations where the gas network will remain longer. The document classifies neighborhoods by density, build year and the technical feasibility of different heating options. These spatial conditions determine how the municipality sequences neighborhoods and where large scale heating solutions can be developed (Gemeente Zaanstad, 2021).

Social context: The documents state that the municipality must collaborate with diverse resident groups and strong variations in housing type and ownership. The vision highlights that a large share of the housing stock is in hands of corporations, while many older houses are privately owned. The document notes that residents must be involved early in WUP and that local initiatives and participation structures influence how the municipality enters neighborhoods. The vision also describes the use of energy coaches, collective buy ins and information channels to reach residents. Differences in social composition and existing networks therefore require tailored engagement strategies across neighborhoods (Gemeente Zaanstad, 2021).

Political context: The document sets out that Zaanstad aims to be climate neutral by 2040 and links the heating transition to national and regional frameworks such as the Klimaatakkoord and the RES. The Municipality is described as regisseur, responsible for coordination, planning and the development of WUP. The vision outlines the roles of corporations, electricity net owners Liander and local stakeholders. Administrative processes such as the selection of neighborhoods to get started, alignment with other municipal projects and the role of district managers shape how plans are developed. The document also highlights that the HTV is periodically updated to adjust to new technical, legal and financial conditions (Gemeente Zaanstad, 2021).

Economic context: The HTV describes significant cost differences between heating options and emphasizes the importance of reducing societal costs. The document also highlights the financial

constraints of housing corporations, the importance of subsidies and the dependency on national funding arrangements. Neighborhoods differ in the degree of required building upgrades and investment needs. Economic considerations therefore influence which neighborhoods are prioritized, how neighborhood implementation plans are developed and which heating options are financially feasible. The vision notes that affordability for residents is central to decision making and that the municipality must coordinate funding schemes and subsidy programs to support investments (Gemeente Zaanstad, 2021).

6.5 Table of contextual results

Table 6 summarizes the contextual conditions described above that shape collaboration between Buurkracht and each municipality. The table presents the main spatial, social, political and economic factors reported in the interviews for both actors, followed by shared elements and differences. The document results are not included in the table since these confirm the municipal descriptions and add limited additional variation.

Municipality	Factor	Buurkracht	Municipality	Similarities	Differences
Boxtel & Sint-Michielsgestel	*Spatial*	Fragmented villages; village level engagement needed; no district-heating possible.	Dispersed villages; varied buildings and years that they were built; limited collective options.	Both note village fragmentation; both see village-level approach, as necessary.	Very similar view
	Social	Cohesion varies; some villages closed; trust needed to access networks.	Strong associations; volunteer culture; participation varies; long standing tradition of involvement.	Both note uneven cohesion; both see need to work through local groups.	Very similar views. Slight nuances on Buurkracht focusses on harder to access villages and municipality on standing traditions.
	Political	Small organization;	Stable climate; focus on internal alignment.	Both see small scale as enabling contact; both report departmental differences.	Buurkracht emphasizes smaller size; municipality stresses procedure alignment.
	Economic	Stable incomes; mostly working families.	Mostly owner-occupied homes; little energy poverty.	Both observe a stable economic situation.	Municipality has a little more insight into the economic situation.
Leeuwarden	*Spatial*	Fragmented neighborhoods in Oost; different housing types city vs. villages.	Differences in Oost vs. rest of municipality; in Oost limited boundaries between neighborhoods.	Both see Oost as more difficult because of spatial factors like vague boundaries; both note easier entry in villages.	Similar views
	Social	Low trust; fragmented networks; vulnerable households; dependent on existing social structures	High vulnerability in Oost; confusion from many actors.	Both highlight trust issues; both note resident confusion; both see vulnerable households.	Buurkracht stresses non-responsiveness; municipality stresses confusion due to large number of actors.
	Political	One key municipal contact slowed work; differing	Experimental; inclusive for citizens.	Both note need to align with many	Buurkracht stresses obstructive contact;

		departmental views.		actors; both cite internal complexity.	municipality stresses inclusivity.
	Economic	Financial strain blocks engagement; subsidies cause confusion; variation across city.	Oost faces major economic pressure; subsidies essential; outside areas move faster.	Both report financial pressure in Oost; both see faster progress in higher-income areas.	Buurkracht stresses confusion from subsidy overload; municipality stresses dependency on subsidies.
Rotterdam	*Spatial*	Large city; neighborhoods differ; overlapping initiatives; hard to position.	Large scale; district teams needed for access; spatial factors do not predict success.	Both see scale as core condition; both recognize neighborhood variation.	Buurkracht stresses local conditions; municipality stresses that these do not necessarily predict success.
	Social	Different neighborhood priorities; many actors contact residents; uneven engagement.	Active local groups; socially diverse; social factors do not predict success.	Both see no clear pattern between areas; both note crowded social landscape.	Buurkracht stresses resident priorities; municipality stresses unpredictability; deemed social factors as not necessarily important.
	Political	Large organization; many municipal projects overlap.	Layered structure; district teams not involved early enough; internal complexity slows work.	Both describe multi-layered governance; both cite coordination delays.	Buurkracht stresses municipal organizational size; municipality stresses missing early involvement.
	Economic	Economic conditions vary and do not predict success.	Income differences are not predictive; wealthy areas are not always easier; economic factors not per se important.	Both agree economics do not predict neighborhood success.	Similar views
Zaanstad	*Spatial*	Spread-out municipality; roadmap disrupted by reorganization; neighborhood selection unstable.	Many different neighborhood types; Older housing in need of overhaul exist within the municipality.	Both cite wide spatial variation; both need neighborhood-specific approaches.	Buurkracht stresses loss of local spatial knowledge; municipality stresses infrastructural challenges.
	Social	Need for "first initiators;" team formation varies; groups differ by theme.	Active resident presence varies; expected strong areas are sometimes inactive.	Both report strong social variation; both see importance of early initiators.	Buurkracht focuses on initiators; municipality highlights unpredictable outcomes.
	Political	Reorganization removed access points; sustainability dept re-engaged later.	District managers overloaded; projects expanded quickly; internal coordination issues.	Both cite administrative disruption early on; both depend on district managers.	Buurkracht stresses reorganization impact; municipality stresses capacity overload.
	Economic	No major economic factors noted; social energy is more relevant.	Limited local resources; depends on national funds; vulnerable areas not included.	Both see limited municipal resources; both see capacity constraints.	Buurkracht sees economics as minor factor; municipality sees funding limits as structural.

Table 6. Overview of contextual factors.

6.5.1 Common patterns in the municipal context

Table 6 summarizes the spatial, social, political and economic conditions that shape collaboration between Buurkracht and the four municipalities. Several shared and different patterns appear across cases based on interview statements. These conditions influence how collaboration works in practice and affect what Buurkracht and municipal staff can do in neighborhoods. The following paragraphs present the common contextual factors and the differences that occur across the municipalities.

Common contextual patterns in Table 6:

- **Spatial conditions** show clear similarities across all municipalities. Each case reports spatial fragmentation, mixed building types and notable differences between neighborhoods or villages. These spatial factors shape how teams can be formed and require a neighborhood-specific approach rather than a uniform municipal strategy.
- **Social conditions** also show recurring patterns. All municipalities describe uneven cohesion and varying levels of trust. Some areas have strong volunteer activity or established associations, while others are closed or difficult to access. Both actors report that neighborhood responsiveness differs and that existing social structures influence early engagement.
- **Political and organizational** conditions show similarities as well. Small municipalities mention easier contact across departments but still refer to procedural delays. Larger municipalities describe layered structures, internal complexity and slow access to the correct contact persons. Reorganization or shifts in responsibilities appear in several cases and influence continuity.
- **Economic conditions** differ in detail but show shared elements across the cases. Some municipalities report stable income levels and limited energy poverty, while others note financial strain in specific areas. Across all cases, economic variation alone does not predict neighborhood engagement. Municipalities note that funding needs and resource constraints influence what can be done at the local level.

Differences in contextual conditions in Table 6:

- **Spatial differences** vary strongly across cases. Boxtel and Sint-Michielsgestel describe dispersed villages with clear village identities. Leeuwarden highlights fragmented neighborhoods in Oost. Rotterdam emphasizes the scale of the city and overlapping initiatives, while Zaanstad reports a wide range of neighborhood types and instability in selection due to reorganization.
- **Social differences** also stand out. Boxtel and Sint-Michielsgestel describe long-standing traditions of involvement, while Leeuwarden and Zaanstad report low trust, fragmented networks and high vulnerability in specific areas. Rotterdam and Zaanstad describe crowded social landscapes with many actors involved.
- **Political and organizational** differences are visible across all municipalities. Boxtel and Sint-Michielsgestel note that small scale enables easy contact. Leeuwarden reports obstructive points linked to individual roles. Rotterdam's layered structure and late involvement of district team's slow access. Zaanstad reports reorganization, capacity overload and early instability in responsibilities.
- **Economic differences** also appear. Boxtel and Sint-Michielsgestel describe stable economic conditions. Leeuwarden and Zaanstad report financial pressure in vulnerable areas and

dependence on subsidies. Rotterdam and Leeuwarden describe that economic factors do not predict success, but the municipality of Zaanstad stresses that financial limits influence feasibility.

Taken together, Table 6 shows that municipalities share several contextual characteristics but differ in how spatial, social, organizational and economic factors influence collaboration. These contextual differences help explain the variation in neighborhood engagement and provide the basis for the next chapter's analysis of informal rules and collaboration dynamics.

6.6 Answering sub-question 3

The interviews and documents show that collaboration between Buurkracht and the municipalities takes place under different spatial, social, political and economic conditions. These conditions vary between municipalities and how they are perceived between Buurkracht and the municipality itself. Table 6 summarizes these patterns. Below, the main contextual factors per municipality are outlined, followed by the answer to the sub-question.

Boxtel and Sint-Michielsgestel: In Boxtel and Sint-Michielsgestel, collaboration takes place in the context of dispersed villages, local identities and stable economic conditions. Buurkracht describes clear village boundaries, variation in cohesion and differences in access between villages. The municipality reports similar spatial and social variation and emphasizes the role of local associations and established routines. Both actors also describe a very similar political climate. Differences appear because Buurkracht stresses the fragmented village culture, while the municipality also highlights internal alignment between departments.

Leeuwarden: In Leeuwarden, collaboration is shaped by dense urban neighborhoods in Oost, overlapping initiatives and large differences between neighborhoods. Buurkracht points to fragmented networks and economic pressure in several areas. The municipality reports similar patterns and emphasizes the influence of many actors working in the same locations. Both actors describe strong spatial and social contrasts between Oost and villages outside the city. Differences arise because Buurkracht highlights non-responsiveness and entry barriers, while the municipality points to coordination demands and program pressure.

Rotterdam: In Rotterdam, collaboration takes place in a very large municipal and municipal organization with many neighborhoods, district layers and ongoing programs. Buurkracht reports difficulty establishing presence across districts, variation in neighborhood priorities and limited influence of economic differences. The municipality describes similar variation and states that neighborhood outcomes do not follow predictable spatial or economic patterns. Both actors highlight the scale of the city, the role of district teams and the presence of many initiatives in the same areas. Differences appear because Buurkracht emphasizes organizational size as a constraint, while the municipality stresses internal routines, early involvement of district teams and coordination between layers.

Zaanstad: In Zaanstad, collaboration is shaped by a spread-out municipality and a reorganization of the neighborhood network during the project. Buurkracht reports that changing contact persons and loss of local knowledge influenced early progress. The municipality reports similar issues and emphasizes overloaded district managers, foundation-related building conditions and dependency on national funds. Both actors observe strong variation in neighborhood initiative and the need for early local

contacts. Differences arise because Buurkracht stresses unstable access during the reorganization, while the municipality highlights capacity constraints and structural funding limits.

This all leads to an answer for the following sub-question: *How does the spatial, social, political and economic background of each municipality shape the collaboration between Buurkracht and the municipalities?* The spatial, social, political and economic conditions vary between municipalities and shape how collaboration between Buurkracht and the municipalities is organized. Across all cases, spatial layout, social cohesion, administrative structure and the financial situation of neighborhoods determines where work can begin, how neighborhood access is arranged and how actors coordinate. These contextual factors differ by municipality but show recurring patterns in how they condition collaborative work. Chapter 7 builds on these results by examining how these contextual conditions relate to the wider governance structure and the implementation of the heating transition.

7. Collaborative approaches

This chapter reports the findings on collaboration modes and outcomes using the same structure as the study's data sources. Interview results from Buurkracht are shown first, followed by those from the municipality. This reflects the method and style described in Chapter 3.6.1. Document findings are then presented to show how written material corresponds with the interviews. The chapter ends with a table that compares the four municipalities and a short answer to the sub-question. Interpretation is discussed in Chapter 8.

The interviews show that many of the factors discussed in Chapters 5 and 6 and to lesser extent 4, shape how collaboration between Buurkracht and the municipalities functions in practice. See the conceptual model in figure 3 for a visualization. Interviewees frequently refer to the informal rules, routines and working practices described in Chapter 5 when asked about collaborative approaches. Similarly, they also mention several elements of the municipal context discussed in Chapter 6, such as organizational structure, staffing, neighborhood characteristics and local priorities existing as barriers. Chapters 5 and 6 present these informal and contextual conditions separately. They describe the underlying structures that shape collaboration but do not yet show how these conditions relate directly to implementation outcomes, nor do they present what Buurkracht and the municipality view as the biggest bottlenecks or barriers. Furthermore, they do not look at collaborative approaches. This chapter adds that additional layer. It reports how variations in collaborative approaches influence the speed and stage of implementation across municipalities and identifies the barriers that actors report during the process. This is all presented in an overview in the form of table 7 at the end of the chapter.

7.1 Collaborative approaches in Boxtel and Sint-Michielsgestel

The following sections present the empirical results for Boxtel and Sint-Michielsgestel. Each subsection reports what the interviews and policy documents show about implementation speed, the stage of the heating transition, and the barriers that shape progress. All findings are descriptive and based only on the collected material.

7.1.1 Interview Buurkracht Boxtel and Sint-Michielsgestel: Collaborative approaches

The interview states that neighborhood teams have formed in several locations and that the project is further along in at least one neighborhood. Activities such as greening and climate-adaptation actions have already been conducted to build a basis for trust. These steps help build engagement and create continuity, because residents recognize the supervisors and know how to reach them. The three-year project duration enables repeated contact, which helps maintain progress across actions. The interviewee says that implementation speed differs across villages. Some villages adopted the project quickly and formed teams, while others resisted outside involvement. In one village, Buurkracht attempted several recruitment strategies without success and redirected effort to locations willing to participate. This creates variation in the stage of implementation within the municipality, since according to Buurkracht the project takes time and longer they have been working in location the more results can be produced. Buurkracht reports that cooperation with external partners has improved over time. For example, welfare energy coaches initially distanced themselves from Buurkracht but later collaborated on activities such as thermal-camera walks after repeated engagement.

Barriers: according to Buurkracht barriers appear when neighborhood proposals require approval from municipal departments. Some ideas encounter internal hesitation, which slows the next steps. The

supervisor states that village identities also influence participation and that engagement differs across localities, affecting how quickly neighborhood teams can act.

7.1.2 Interview Municipality of Boxtel and Sint-Michielsgestel: Collaborative approaches

The municipality states that implementation speed benefits from the three-year structure. This duration allows time to build trust, organize repeated small actions and respond to resident concerns at their pace. The interview indicates that early actions focus on accessible measures such as façade gardens or rain barrels, because these can be delivered quickly and help neighborhood teams stay active. Larger energy measures follow only after these early steps. The interview reports differences in implementation between Boxtel and Sint-Michielsgestel. In Boxtel, neighborhoods progress more easily and several teams have formed. In Sint-Michielsgestel, the municipality sometimes shifts to single-action approaches when team formation is slower. This produces various stages of implementation across the two municipalities. Internal coordination affects speed. To realize local greening or small public space actions, sustainability staff must work with departments such as green management. The project officer notes that cooperation between departments can be difficult and that mismatches between units delay the implementation of neighborhood proposals. The interview also mentions that participation requirements lead to uncertainty about internal procedures, which slows decisions about resident-driven ideas.

Barriers: The interview identifies barriers linked to municipal capacity and organizational alignment. Feedback from neighborhoods does not always lead to quick adjustments, and some goals must be revised during implementation because local conditions differ. Energy-related decisions are influenced by the cost of measures and the current focus of residents, which can slow progression towards larger energy steps.

7.1.3 Document analysis of Municipality of Boxtel and Sint-Michielsgestel: Collaborative approaches

The municipal plans set clear goals for early progress in the heating transition. The Municipality of Boxtel (2021, 2023) describes a phased approach in which neighborhoods begin with accessible actions before moving to more demanding energy measures. The municipality places early engagement at the center of its strategy. These documents state that small, visible measures are intended to build momentum and help residents take the first steps in the transition (Gemeente Boxtel 2021, 2023). This emphasis is visible in the implementation practice described in the interviews. Buurkracht reports that neighborhood teams have been formed in multiple districts and that early greening and climate-adaptation actions have already taken place. These activities correspond with the Uitvoeringsprogramma, which describes the importance of early, low-threshold actions as part of the *"woninggerichte"* or building oriented and *"gebiedsgerichte"* or area specific way of working (Gemeente Boxtel, 2023, pp. 10–11; p. 33)).The municipal plans also stress that the transition process requires repeated contact and ongoing support. They describe the need for a clear, consistent presence that helps residents understand available steps and participate over time (Gemeente Boxtel 2021, 2023). This confirms the interviews, which describe how repeated engagement over the three-year project period helps maintain neighborhood involvement and support the gradual development of local teams.

The municipal documents also highlight the importance of cooperation with partners. They emphasize ongoing collaboration with housing corporations, welfare organizations, local entrepreneurs and

energy coaches (Gemeente Boxtel, 2023). Interview statements show that cooperation with external partners has strengthened over time and that partners join neighborhood activities after repeated engagement, which aligns with the gradual partnership-building described in the plans.

Internal capacity and coordination appear in both the plans and the interviews. The Uitvoeringsprogramma states that the sustainability organization must grow from 1.75 to 7.3 full time equivalent to meet the 2030 goals and that internal coordination processes require improvement (Gemeente Boxtel, 2023). Interviewees report that neighborhood proposals sometimes encounter delays when municipal departments must be consulted and that differences between units influence the pace at which actions can be conducted. These statements reflect the barriers noted in the documents.

Overall, the interviews align closely with the intentions described in the municipal plans. Early small-scale actions are being used to establish engagement, personal contact structures are in place, partner cooperation develops gradually and internal coordination continues to influence implementation speed. The interviews therefore confirm the main principles that the municipality set out for the early phase of the heating transition.

7.2 Collaborative approaches in Leeuwarden

The following sections present the empirical results for Leeuwarden. Each subsection reports what the interviews and policy documents show about implementation speed, the stage of the heating transition, and the barriers that shape progress. All findings are descriptive and based only on the collected material.

7.2.1 Interview Buurkracht Leeuwarden: Collaborative approaches

The interview describes that the project in Leeuwarden developed slowly in the beginning. Buurkracht reports that initial engagement attempts did not lead to strong neighborhood involvement and that teams did not form as quickly as expected. According to the interview, this slow start affected the pace of implementation. Early actions were limited and Buurkracht states that residents needed time to become familiar with the project and contact with the municipality was sometimes hard. Over time, participation increased and residents provided input on local priorities. The interview indicates that results develop gradually, because the project depends on repeated contact and visible presence.

According to Buurkracht, differences between neighborhoods influence the stage of implementation. Some areas respond faster to outreach, while others remain hesitant or wait for clear guidance from the municipality. The interview notes that cooperation with municipal staff works well, but that internal procedures sometimes delay follow-up steps. Buurkracht states that this affects how quickly ideas can be processed.

Barriers: Buurkracht identifies barriers related to organizational structure. Internal municipal processes can slow down decisions about neighborhood proposals. In addition, Buurkracht mentions that the lack of clearly defined local entry points makes it difficult to build continuity in some neighborhoods. According to the interview, these factors limit the pace of early implementation steps.

7.2.2 Interview Municipality of Leeuwarden: Collaborative approaches

The municipality states that the pace of implementation depends on the conditions in each neighborhood. According to the interview, several neighborhoods are still in early phases because

residents first need information and clarity about options. The interview indicates that the municipality focuses on step-by-step engagement and that progress differs across the city. Some neighborhoods respond quickly and show clear interest, while others need additional time before larger actions become feasible.

The interview shows that the municipality uses small, accessible actions, when possible, but that the heating transition requires long preparation and careful planning. The municipality explains that implementation depends on the planning and development of infrastructure projects. Where technical decisions are still pending, the stage of implementation remains early.

According to the interview, capacity is also an influencing factor. The municipality reports that coordinating technical, social, and organizational tasks takes time. The interview states that Internal alignment between departments is needed and this can delay next steps. The interview notes that financial uncertainty shapes decision-making and that some neighborhoods must wait for external developments before the heating transition can get started.

Barriers: The interview identifies barriers related to organizational alignment, capacity limits and dependencies on regional infrastructure. Uncertainty about timelines for infrastructure expansion affects planning in several neighborhoods. The interview also mentions that some resident groups express concerns about affordability and that this slows willingness to commit to the next steps.

7.2.3 Document analysis Municipality of Leeuwarden: Collaborative approaches

The municipal documents describe a step-by-step development of the heating transition. The HTV states that the municipality aims to move toward a gas free municipality by 2050 and plans early steps in neighborhoods with the strongest technical and social conditions for progress (Gemeente Leeuwarden, 2021, p. 5). The strategy emphasizes gradual implementation and repeated engagement through WUP, which aligns with the interviews. The municipality plans to start in highest chance of success neighborhoods where technical and social criteria are met, and stresses that these neighborhoods define the tempo of progress (Gemeente Leeuwarden 2021). This corresponds with interview statements about differing speeds across neighborhoods.

The HTV highlights that early progress depends on communication, participation and repeated contact with residents. The document notes that "iedereen moet kunnen meedoen en meedenken" or everyone must be able to share ideas and participate and that the municipality must offer clear information and support before larger steps can be taken (Gemeente Leeuwarden 2021). The documents also emphasize the importance of small, accessible measures and neighborhood communication (Gemeente Leeuwarden 2021).This aligns with the interviews, which describe early, low-threshold actions and a phased process.

The HTV identifies several structural barriers that match interview statements. These include capacity shortages, the need for organizational alignment and dependencies on the development of infrastructure (Gemeente Leeuwarden 2021). The municipality notes that the rollout of collective heat infrastructure determines the pace in several neighborhoods and that budget availability from the national government shapes feasibility, especially in poorer neighborhoods (Gemeente Leeuwarden 2021). These points appear in the interviews as well, where municipal staff refer to capacity constraints and timeline uncertainties for technical solutions.

The HTV further describes that different neighborhoods require 'maatwerk' or customization and that some social groups need additional support to participate (Gemeente Leeuwarden 2021). Interviews confirm that resident engagement varies across neighborhoods and that this affects implementation stages.

Overall, the interviews and the municipal documents align closely. Both emphasize a gradual, neighborhood-specific process, early small-scale actions, the significant role of communication, and structural barriers related to capacity, infrastructure dependencies and internal coordination. The interviews therefore reflect the main principles and challenges outlined in the HTV.

7.3 Collaborative approaches in Rotterdam

The following sections present the empirical results for Rotterdam. Each subsection reports what the interviews and policy documents show about implementation speed, the stage of the heating transition, and the barriers that shape progress. All findings are descriptive and based only on the collected material.

7.3.1 Interview Buurkracht Rotterdam: Collaborative approaches

The interview with Buurkracht mentions that Rotterdam is at an early stage of implementation. Buurkracht states that the formation of neighborhood teams progresses slowly. The interview notes that Rotterdam is large and that each neighborhood has its own structure and priorities. According to Buurkracht, this makes it difficult to establish stable teams. The interview describes that early actions focus on accessible themes such as greening or waste collection. These steps are used to build trust and to create first results before moving to sustainability actions.

The interview reports that differences between neighborhoods influence the pace of work. Some areas respond quickly, while others focus on other issues such as safety or basic needs. Buurkracht indicates that progress depends on repeated presence. The interview states that forming a team takes time and requires consistent contact with residents. The interview notes that many reactions to early outreach were negative about local conditions. This limits the formation of positive teams in those areas.

Buurkracht states that cooperation with the municipality is open but that organizational size slows communication. The interview indicates that contacts are stable but that changes in municipal staff have happened before and affect continuity. According to Buurkracht, working with the many other initiatives in Rotterdam is complex. Some initiatives cooperate directly, while others operate alongside the project.

Barriers: Buurkracht identifies that accessing neighborhood networks is difficult. The interview notes that the municipality is large and that Buurkracht is not known across all departments. In some neighborhoods, priorities differ from sustainability and this slows team formation. Buurkracht also states that many stakeholders are active in Rotterdam. This makes it difficult to position the project and to maintain clear contact points.

7.3.2 Interview Municipality of Rotterdam: Collaborative approaches

The municipality states that implementation speed is below expectations. The interview notes that Buurkracht planned to form twelve neighborhood teams in the first project year, but that these teams are not yet established. The municipality reports that progress is slower than planned and that the actions conducted by existing teams are limited.

The interview indicates that Rotterdam's size affects the pace of work. The municipality describes that district teams and neighborhood organizations play a significant role in resident contact. According to the interview, Buurkracht had difficulty connecting with these structures, because the project was contracted before district teams were involved. This caused delays. The municipality notes that the organizational structure in Rotterdam has many layers and that cooperation with these layers is necessary for implementation.

The interview shows that internal coordination also affects the pace. The municipality states that changes in project leadership at Buurkracht and within the municipal organization slowed continuity. According to the interview, the first clear internal escalation about slow progress occurred after more than a year. Regular meetings now take place to monitor progress, but the early stalling of the project is still bottlenecking progress. Another thing the municipality mentioned is that they do not take the work done by Buurkracht into consideration when calculating their CO_2 emissions. They mentioned that this is because they classify the work more on the social side.

Barriers: The interview identifies barriers related to scale, organizational complexity and the time needed to build local networks. Rotterdam's district teams must connect Buurkracht to local social structures, but this link was slow to establish. A different kind of barrier is the slow early progress due to a mismatch between working styles of the municipality and Buurkracht.

7.3.3 Document analysis Municipality of Rotterdam: Collaborative approaches

Rotterdam's municipal plans set goals for the heating transition that emphasize large scale energy measures, coordinated district approaches and the development of new infrastructure. The Raadsakkoord Energietransitie states that Rotterdam aims for a sharp reduction of CO_2 emissions and commits to the national climate goals (Gemeente Rotterdam 2021). The Klimaatakkoord describes measures for the built environment and stresses cooperation with housing corporations and local partners (Gemeente Rotterdam, 2019).

The plans emphasize a structured, district based approach. The Klimaatakkoord notes that progress depends on collaboration across municipal departments, housing associations and local initiatives (Gemeente Rottedam 2019). The documents also highlight that Rotterdam has many ongoing energy and mobility projects. This corresponds with the interviews, which describe the substantial number of actors involved in neighborhoods and the complexity of working in this environment.

The plans indicate that resident engagement is important for the transition. They describe participation platforms and local initiatives as ways to support collective actions (Gemeente Rotterdam 2022). This aligns with the interview statements that neighborhood networks are central for communication. The documents also highlight the need for organizational capacity and internal coordination to meet the goals (Gemeente Rotterdam, 2022. This reflects the interview findings that coordination across municipal layers influences the pace of implementation.

The interviews and documents show partial alignment. Both emphasize the importance of neighborhood involvement and the role of local networks. Both state that coordination across actors is required. However, the interviews show that forming neighborhood teams in Rotterdam is slow and difficult. The documents present a structured, scalable district approach that depends on stable coordination. These conditions are not yet visible in the interviews. The interviews confirm the goals

and intentions described in the plans but show that practical implementation progresses slower than outlined.

7.4 Collaborative approaches in Zaanstad

The following sections present the empirical results for Zaanstad. Each subsection reports what the interviews and policy documents show about implementation speed, the stage of the heating transition, and the barriers that shape progress. All findings are descriptive and based only on the collected material.

7.4.1 Interview Buurkracht Zaanstad: Collaborative approaches

The interview describes that implementation in Zaanstad started with a long preparatory phase. Buurkracht reports that the first months were spent on neighborhood profiles and early contact with stakeholders, which slowed initial progress. According to the interview, the formation of neighborhood teams varies across the city. Some areas show early willingness, while others require repeated engagement before residents participate. Buurkracht indicates that progress depends on the time needed to establish trust and to identify suitable residents to form a stable group, as these factors help with implementation later on.

The interview notes that several neighborhood activities take place, often focused on small steps such as greening or safety-related initiatives. In some areas, residents prioritize social issues before energy or sustainability topics. These differences influence the stage of implementation. Buurkracht states that some neighborhoods move towards sustainability topics, while others remain in an early phase with only introductory or social activities.

According to the interview, cooperation with the municipality is constructive. Buurkracht works with municipal staff through regular meetings to align actions and share progress. The interview indicates that municipal support helps connect neighborhood teams to local organizations when needed. However, the interview also states that it takes time to reach the correct municipal or external partners due to the number of actors involved in Zaanstad.

Barriers: The interview notes that neighborhoods with existing social structures require careful coordination, and alignment with these structures sometimes delays next steps. In addition, the time needed for neighborhoods to build their own initiative reduces the pace at which sustainability topics can be introduced.

7.4.2 Interview municipality of Zaanstad: Collaborative approaches

The municipal interview states that implementation speed is shaped by organizational structure and political context. The interview describes that Zaanstad relies on national funding streams and that available resources influence how quickly actions can be carried out. According to the interview, preparing and approving neighborhood activities requires coordination across different departments. This coordination takes time and affects the pace of implementation.

The interview reports that progress across neighborhoods varies. Some neighborhoods show early activity, while others require additional time to become engaged. The municipality notes that Buurkracht's step-by-step approach helps activate neighborhoods but that the number of concrete sustainability actions remains limited at this stage. The interview indicates that much of the progress relates to trust building, social cohesion and small-scale actions rather than energy-specific measures.

The municipality highlights the importance of district managers for building local networks. The interview notes that district managers act as key links between Buurkracht and neighborhood initiatives, but that involving them took time. Early phases required extensive clarification of roles and responsibilities. According to the interview, this slowed the start-up period.

Barriers: The interview identifies barriers related to organizational alignment, such as delays in reaching the appropriate municipal contacts and varying levels of engagement among district managers. The interview also mentions financial and staffing constraints, especially in the context of national budget reductions. In addition, the municipality reports that turnover among Buurkracht staff and municipal district managers affects continuity and slows the development of neighborhood teams.

7.4.3 Document analysis municipality of Zaanstad: Collaborative approaches

The municipal plans describe Zaanstad's goals for the heating transition and identify the conditions required for local progress. The HYV sets the ambition to achieve significant CO_2 reductions by 2030 and outlines a step-by-step approach toward gas free living (Gemeente Zaanstad, 2021). The plan identifies neighborhoods where early progress is expected and highlights the importance of communication, participation and cooperation with local organizations (Gemeente Zaanstad 2021). These objectives match the interview findings that neighborhood involvement and trust building are essential early steps.

The HTV emphasizes that progress depends on a clear understanding of neighborhood characteristics, existing social structures and the feasibility of technical measures (Gemeente Zaanstad 2021). This aligns with the interviews, which describe differences in neighborhood readiness and report that certain areas prioritize social or safety issues before sustainability topics.

The documents also note that internal coordination and organizational capacity are important for the transition. They state that staff availability and interdepartmental cooperation must support neighborhood processes (Gemeente Zaanstad 2021). The municipal interview reports similar points, noting that coordinating efforts across teams takes time and that capacity limitations shape implementation speed (Gemeente Zaanstad 2021).

The plans emphasize cooperation with partners such as housing associations and local organizations (Gemeente Zaanstad 2021). The interviews show that such cooperation develops gradually. The municipality often helps Buurkracht connect with existing neighborhood initiatives or external foundations when relevant, which is consistent with the cooperative role described in the plans.

The documents identify barriers including limited municipal resources, dependency on national funding and the need for stable neighborhood networks (Gemeente Zaanstad 2021). These barriers match the interview statements about financial constraints, staffing turnover and the difficulty of ensuring continuity in neighborhood initiatives.

Overall, the interviews and municipal documents show strong alignment. Both describe a step-by-step development of the heating transition, variation between neighborhoods and the need for stable networks and internal coordination. The interviews confirm that early implementation in Zaanstad focuses on building trust and local engagement, while structural and organizational factors limit the speed of sustainability-specific actions.

7.5 Table of collaborative approaches

Table 7 provides an overview of the main results for the four municipalities. The table brings together the key elements that shape how collaboration takes place and how this relates to the speed and stage of implementation. Each category in the table reflects a specific part of the sub question. The column on the collaboration approach summarizes how Buurkracht and the municipalities describe their working relationship, including contact lines, access to departments and the way neighborhoods are approached. The speed of implementation column reports how quickly early activities develop and how fast neighborhoods move through the first steps. The stage of implementation shows what has been achieved so far in each municipality, such as team formation or early actions. The barriers column lists the organizational, social or procedural factors that interviewees say affect progress. The final column indicates how the interview findings relate to the expectations set out in the municipal plans. Together, these categories present the main patterns across the municipalities and form the basis for the comparison that follows.

Municipality	Collaboration approach	Speed of implementation	Stage of implementation	Reported barriers	Alignment with municipal plans
Boxtel & Sint-Michielsgestel	Frequent direct contact; stable contact persons; easy access to departments; cooperation across teams.	Faster than other cases; early actions deliver quick engagement and higher trust.	Neighborhood teams formed; greening and climate-adaptation activities completed; variation between villages.	Internal hesitation; department delays; identity differences; limited capacity.	Plans emphasize early actions, repeated contact and partner cooperation; interviews confirm this.
Leeuwarden	Collaboration varies per neighborhood; personal engagement needed; mixed responsiveness.	Slow to moderate; some areas respond early, others slower.	Some teams formed; others remain in early orientation; early actions small-scale.	Fragmented coordination; uncertainty infrastructure; resident hesitation; capacity limits.	Plans emphasize gradual progress and neighborhood differences; interviews align.
Rotterdam	Collaboration shaped by scale; many actors involved; dependence on district teams; staff changes.	Slower than planned; team formation delayed.	Mostly early stage; limited completed actions; many areas in preparation.	Organizational complexity; approval layers; slow access to networks; turnover; competing initiatives.	Plans expect structured district approach; interviews show slower progress but consistent dependencies.
Zaanstad	Step-by-step engagement through district managers; many stakeholders.	Slow to moderate; long start-up; mixed neighborhood uptake.	Early greening and social activities; limited sustainability-specific steps.	Department delays; varying district-manager engagement; financial constraints; turnover; neighborhood differences.	Plans stress neighborhood diversity, participation needs and funding dependence; interviews align.

Table 7.Overview of barriers and speed of implementation.

7.5.1 Commonalities and differences in barriers and patterns

Table 7 shows the main results for each municipality. Several shared patterns appear across cases, based on the interview material and the municipal plans. These points clarify which conditions influence the speed and stage of implementation. The following paragraphs summarize the common

barriers, the common collaborative features and the differences that recur across the municipalities, as they were described in the interviews and displayed in table 7.

The following common barriers exist in table 7:

- The first common barrier is the **delay caused by internal coordination**. Interviewees in all municipalities report that proposals need checks from several departments. This slows early actions because approval steps take time and teams depend on different internal units for follow-up. Coordination also becomes slower when contact persons change, which reduces continuity.
- A second barrier is **the variation in neighborhood readiness**. Some neighborhoods respond early to outreach, while others require repeated engagement before residents participate. Local concerns, such as public-space issues or safety, influence willingness to join. As a result, team formation takes longer in some areas and early actions stay limited.
- A third barrier concerns **staff capacity and turnover**. Municipal teams and Buurkracht supervisors have limited time to support neighborhood work. Several cases mention turnover, which interrupts established contact lines and slows planning. When new staff enter the process, collaboration takes time to rebuild.
- A fourth barrier relates to **accessing local networks**. Buurkracht often needs time to identify appropriate contacts inside the municipality or within neighborhood organizations. The number of actors differs strongly per area, and some networks are not yet organized. This affects how quickly activity can start in each neighborhood.
- A final barrier is **uncertainty about external factors**. Interviewees mention unclear district heating and other infrastructure timelines, dependencies on national funding and technical decisions that influence local planning. Some residents wait for clarity before taking steps, which keeps neighborhoods in early phases.

The following differences in barriers exist in table 7:

- The first difference concerns **organizational scale**. Rotterdam reports the most complex structure and the slowest access to district teams. Boxtel and Sint-Michielsgestel report fewer layers. Zaanstad and Leeuwarden sit between these two extremes.
- A second difference is the **weight of infrastructure dependencies**. Leeuwarden and Zaanstad report strong links between progress and district-heating development. Boxtel and Sint-Michielsgestel report minimal influence. Rotterdam notes dependencies but highlights internal coordination more strongly.
- A third difference concerns **neighborhood pressures**. Leeuwarden and Zaanstad report vulnerable areas were social and economic issues slow engagement. Rotterdam reports neighborhoods with negative reactions to local conditions. Boxtel and Sint-Michielsgestel report more stable engagement.
- A fourth difference is **resource availability**. Zaanstad depends on national funding. Rotterdam reports limited organizational capacity due to scale and competing projects. Leeuwarden notes long-term staffing needs. Boxtel and Sint-Michielsgestel report smaller but manageable constraints.

- A final difference concerns the **number of actors involved**. Rotterdam and Leeuwarden describe crowded intermediary fields. Zaanstad reports many actors in some areas and few in others. Boxtel and Sint-Michielsgestel report fewer actors and easier access.

The following common patterns in collaborative approaches can be seen in table 7:

- A first common pattern is the **importance of repeated contact**. Interviewees in all municipalities state that progress depends on continuous presence, frequent communication and ongoing follow-up. Repetition helps maintain visibility and supports the formation of neighborhood teams.
- A second pattern is **the use of small, accessible early actions**. Neighborhood work begins with low-cost steps such as greening or local events. These activities create first engagement and help establish basic contact before sustainability-specific measures can be introduced.
- A third pattern is **the reliance on stable contact persons**. Collaboration progresses faster when municipal staff and Buurkracht supervisors remain consistent. When staff change, coordination slows and neighborhood activities need to be rebuilt.
- A fourth pattern is that **neighborhood-specific conditions determine the pace**. Priorities, local networks and social conditions differ across areas. Some neighborhoods focus first on social or practical issues, which influences how quickly sustainability topics can follow.
- A final pattern is the **gradual development of cooperation with partners**. Several interviewees describe that partner involvement improves over time. Municipal support is needed to connect Buurkracht to local organizations, and partners often join after repeated engagement.

The following differences in collaborative approaches can be seen in table 7:

A first difference concerns **contact structures**. Boxtel and Sint-Michielsgestel use short direct lines. Rotterdam depends on district teams and layered communication. Zaanstad works with district managers. Leeuwarden relies on individual contacts and early "clicks."
- A second difference concerns **working styles**. Leeuwarden notes differences in mindset and style. Rotterdam notes mismatches in expectations between Buurkracht and municipal staff. Zaanstad reports timing issues due to reorganization. Boxtel and Sint-Michielsgestel describe smoother alignment.
- A third difference concerns the **tempo of trust-building**. Boxtel and Sint-Michielsgestel establish trust quickly. Leeuwarden and Zaanstad report slower trust-building in specific areas. Rotterdam reports neighborhoods where trust remains low for longer and even now needs work
- A final difference concerns **partner involvement**. Rotterdam requires alignment with many actors. Leeuwarden depends on district structures in specific areas. Zaanstad works through district managers. Boxtel and Sint-Michielsgestel rely strongly on local associations.

Taken together, these shared barriers and collaborative approaches form a good basis for answering the sub-question in the next chapter.

7.6 Answering sub-question 4

The results show that differences in collaborative approaches shape the speed and stage of implementation in all four municipalities. Collaboration structures, internal access, continuity of contact persons and neighborhood engagement each influence how fast early actions start and how

far neighborhoods progress. This all answers the following sub-question: *How do variations in collaborative approaches between Buurkracht and each municipality affect the speed and stage of heating transition implementation, and what barriers to implementation exist?* Since this question has multiple parts, they are answered per part below.

Collaborative approaches: The results show that collaborative approaches shape how fast the first steps of the heating transition progress. The approach in Boxtel and Sint Michielsgestel supports early actions and stable neighborhood teams, which matches the approach set out in the Uitvoeringsprogramma (Gemeente Boxtel, 2023). In Leeuwarden collaboration depends on personal contact structures that differ per neighborhood. This reflects its neighborhood strategy and leads to uneven early progress across the city (Gemeente Leeuwarden, 2021). Rotterdam works with layered district teams and many ongoing initiatives. This slows early steps and keeps most neighborhoods in preparation, which aligns with the complexity described in the Klimaatakkoord (Gemeente Rotterdam, 2019). Zaanstad uses district managers to link Buurkracht to local networks. This approach supports steady contact but also introduces delays when roles or staff change, consistent with the HTV (Gemeente Zaanstad, 2021).

Speed of implementation: Municipalities with short contact lines and clear internal entry points show the highest speed. In Boxtel and Sint Michielsgestel stable contact persons and easy access to departments support quick early steps and the timely formation of neighborhood teams, which aligns with the municipality's planning approach (Gemeente Boxtel, 2023). In Leeuwarden speed is mixed. Personal contact is maintained, but differences between neighborhoods and dependencies on infrastructure planning keep the overall pace between slow and moderate (Gemeente Leeuwarden, 2021). Rotterdam shows the slowest speed. Its large organizational scale and multiple administrative layers make it difficult for Buurkracht to connect to district structures, which reduces early progress (Gemeente Rotterdam, 2019). Zaanstad develops at a gradual pace. A long start up period and the time needed to build neighborhood networks and clarify roles slow early steps before more substantial activities can begin(Gemeente Zaanstad, 2021). As seen in the interviews now that these are in place, Zaanstad has picked up pace and been making big leaps in implementing speed.

Stage of implementation: Stage of implementation describes what has been achieved, not how fast. In parts of Boxtel and Sint Michielsgestel neighborhood teams are in place, and several visible early actions have been completed (Gemeente Boxtel, 2023). In Leeuwarden and Zaanstad the stage of implementation differs strongly per neighborhood. Some areas have moved beyond first contact, while others remain in an early orientation phase with small or social activities, consistent with their phased neighborhood strategies (Gemeente Leeuwarden, 2021; Gemeente Zaanstad, 2021). In Rotterdam most neighborhoods remain in an early stage. Team formation has not met original expectations and completed actions are limited, which corresponds with the slower practical rollout reported in policy documents (Gemeente Rotterdam, 2019).

Barriers to implementation: The results reveal a set of recurring barriers. Internal municipal procedures and the need to consult multiple departments slow decisions on neighborhood proposals in every municipality. Limited staff capacity and turnover of key contact persons reduce continuity and delay follow-up. Difficulties in accessing the right internal or local networks mean that identifying suitable partners and resident groups often takes time. In Leeuwarden, Rotterdam and Zaanstad, uncertainty about future infrastructure and dependence on external funding further constrain planning (Gemeente Leeuwarden, 2021; Gemeente Rotterdam, 2019; Gemeente Zaanstad, 2021). In addition,

neighborhood priorities do not always focus on energy; in several areas residents first address social or safety concerns, which postpones sustainability-related steps.

Overall, the findings show that variations in collaborative approaches strongly influence the speed and stage of implementation. Direct coordination, stable contact persons and accessible internal structures support faster progress and higher implementation stages. Complex organizational settings, unclear procedures, limited capacity and neighborhood-specific priorities slow the pace and keep many neighborhoods in early phases. The barriers identified in both interviews and municipal plans confirm that formal ambitions can only be realized when the practical working conditions of collaboration allow neighborhood initiatives to develop. These findings form the basis for the broader discussion and answering of the main research question in the next chapter.

8. Discussion

This chapter brings together the findings from the four sub-questions and examines what they mean for the main research question. The aim is to move from the descriptive results in Chapters 4 to 7 to an integrated explanation of how collaboration between Buurkracht and the municipalities takes shape. Therefore, it begins with an integrated answer to the main research question. After that, the chapter links these patterns to the theoretical perspectives from the literature review and reflects on the methodological choices that shaped the analysis. The chapter ends by outlining directions for future research and offering a short concluding reflection.

8.1 Answer to the main research question

This section brings the findings from Chapters 4 to 7 together to provide a consolidated answer to the main research question. The analysis compares the formal rules, informal rules, contextual factors and collaborative approaches in each municipality and explains how these elements shape the collaboration with Buurkracht. Recalling the research gap identified in Chapter 1, existing studies have not examined how these institutional layers interact in practice or how similar national frameworks produce different collaboration outcomes across municipalities. Prior work has focused on single dimensions such as policy design or community engagement, leaving open the question of how formal structures, informal practices and local conditions operate together in multi actor settings (Ansell & Gash, 2008; Ostrom, 2009; Hoppe et al., 2015; Milchram et al., 2019). By integrating the four sub questions, this section addresses that gap. The goal is to move beyond description and assess the patterns that are shared across the four cases, identify where and why they diverge and explain what these differences mean for understanding the variation in collaboration. This is done by answering the main research question:

"What are the key similarities and differences in the collaboration between Buurkracht and the four municipalities (Boxtel en Sint Michielsgestel, Leeuwarden, Rotterdam, and Zaanstad) in implementing heating transition plans, and why do these variations exist?"

This research question consists of three distinct parts. Similarities, differences and an explanation for why these exist. Each of these will be discussed separately with a definitive answer at the end.

8.1.1 Key similarities in collaboration

Across all four municipalities the collaboration rests on a comparable basic set up. Each case is embedded in the BZK12 subsidy framework with similar requirements for working in twelve neighborhoods per municipality, reporting on progress and combining national and municipal funding. This creates a shared formal structure and defines Buurkracht as a partner that connects municipal goals to resident initiatives rather than as an independent project actor. Another similarity in the formal dimension is that across all four municipalities, triangulation showed that formal documents rarely describe the operational role of Buurkracht. Policy texts, HTV's, council notes, and program agreements outline municipal responsibilities in detail, but they provide almost no procedural description of how intermediaries work. Things that come closest are statements such as "betrokkenheid is hierin het sleutelwoord" ("engagement is the key word here") (Gemeente Boxtel, 2023b, p. 33). Therefore, a similarity is the lack formalization of intermediary work in municipal plans.

Informal institutions show common elements as well. In all four cases daily collaboration is organized through short personal communication lines where possible, reliance on local gatekeepers in

neighborhood networks and practical routines for early signaling when coordination slows down. Local knowledge of neighborhood dynamics and key figures is repeatedly described as necessary for both municipal staff and Buurkracht to work effectively. In every municipality cooperation relies on repeated contact between a small set of municipal officials and Buurkracht staff, trust based interaction and visible early steps in the neighborhoods. Small and accessible actions such as local events, greening activities or simple energy saving measures are used to open doors and build credibility. Stable contact persons on both sides and clear neighborhood entry points appear as recurring conditions for progress.

These similarities follow directly from the results of the first two sub-questions. Sub-question 1 shows that all municipalities operate within the same formal framework. Sub-question 2 shows that similar informal routines support cooperation. Together these findings explain why the basic set up and everyday organization of the collaboration look similar across all municipalities.

8.1.2 Key differences between municipalities

Despite these common foundations, the way collaboration takes shape and the speed of implementation differ markedly.

In Boxtel and Sint Michielsgestel collaboration fits a facilitative mode. Small scale, dense local networks and accessible municipal structures allow short communication lines and quick feedback loops. Contacts are stable, mutual trust develops quickly, and informal coordination is widely accepted. As a result, neighborhood teams form fast and several visible actions have already been completed. The downside is strong reliance on individual relationships and tacit learning which are not yet fully embedded in formal procedures.

Leeuwarden and Zaanstad display a more coordinative mode. In both municipalities Buurkracht has to fit into existing neighborhood teams and extensive local networks. Collaboration depends strongly on interpersonal clicks and the ability to align with welfare organizations and district managers. Reorganizations, capacity constraints and vulnerable neighborhoods make access and trust building slower and more uneven across areas. Progress is visible in some neighborhoods yet remains patchy and strongly shaped by local conditions and internal workload.

Rotterdam shows a directive mode. The municipal organization is large with many layers, district teams and programs. Collaboration is structured through scheduled meetings and expectations that Buurkracht positions itself within existing district networks without strong municipal facilitation. The city classifies Buurkracht on the social side of the transition rather than as a central actor for achieving emission targets and trust building in several neighborhoods is slow. Implementation remains in early stages and neighborhood teams lag behind original ambitions.

These differences follow from the results of the second, third and fourth sub-questions. Sub-question 2 shows that informal routines and working cultures vary between municipalities. Sub-question 3 shows that neighborhood context differs. As shown in figure 3: the conceptual mode, sub-question 4 shows that these institutional and contextual conditions translate into distinct collaborative approaches, barriers, speeds and stages of implementation.

8.1.3 Why do these variations exist

Putting these strands of similarities and differences together the main finding is that equal frameworks generate unequal outcomes. Shared national rules and a standardized intermediary model only led to effective collaboration where formal structures, informal routines, local context, and collaborative

modes move in the same direction. Collaboration advances fastest where municipal governance is facilitative and learning oriented, where internal entry points are clear and where local networks allow quick trust building. It slows where bureaucratic layers, reorganizations, staff turnover or vulnerable social conditions break continuity and limit the room to adapt the program to neighborhood realities.

Two indicators make this visible. The first is **absorptive collaboration capacity**, meaning the ability to take in and apply the other organization's working style. The second is **institutional fit**, meaning the ability to adjust one's own routines to the informal rules of the collaboration. Local context only becomes manageable once this alignment is in place. The municipalities and Buurkracht often approached this the other way around, leading to problems and slower progress. They used the context to set informal institutions and their way of working together, leading to problems.

The following two examples make this concrete. The first shows how the absorption collaboration capacity and institutional fit enabling a better result and the second shows how these can also lead to slower progress.

Example 1. In Boxtel and Sint-Michielsgestel municipal staff and Buurkracht organized an outreach activity using a large white chair. Staff walked through villages carrying the chair with painted white faces and did not speak when residents approached them. The aim was to trigger curiosity and encourage informal conversation. A small media campaign invited residents to report sightings of the chair, followed by a gathering where residents could sit on the chair. Many residents stayed and became interested in the project. This activity was possible because both parties aligned their routines. Communication was direct, contact persons were stable and both sides adjusted to the informal norms of accessibility, visibility and open interaction. Their working styles were absorbed into a shared approach, allowing them to address a contextual challenge together.

Example 2. Several neighborhoods across the municipalities were difficult places for forming neighborhood teams. In some of these neighborhoods strong social structures were already active and had been effective for other initiatives. These structures played a role in how engagement normally took place. They provided continuity, access routes and established expectations. Buurkracht did not consistently draw on these structures and continued with its own method for forming teams. Even though, these structures were often known by the municipality and seen as a good starting point. This shows limited absorptive collaboration capacity and a bad institutional fit. Had Buurkracht allowed to municipality to see what worked and what did not work and had the municipality asked more directly about progress, they would've made earlier progress. Both focused on the problem not the solution. Or in other words, both parties let contextual factors influence their shared informal institutions. As a result, progress remained limited and coordination took longer.

These examples show that collaboration outcomes depend on whether working styles and informal routines align before dealing with contextual barriers. This does not mean that context is not important, but that misalignment of informal institutions makes it even more difficult to work through these problems. However, when this alignment is present, contextual challenges become manageable, as both parties have ways of working and similar goals.

8.1.4 Final answer to the main research question
The main research question asked what the key similarities and differences are in the collaboration between Buurkracht and the four municipalities, and why these variations exist. The analysis shows

that the similarities lie in the shared formal framework and the recurring informal norms of personal contact, low-threshold communication and neighborhood-based work. The differences arise in how far each municipality aligns its informal routines and working style with those of Buurkracht in order to work on the contextual constrains together. The national framework is uniform, yet collaboration develops differently because absorptive collaboration capacity and institutional fit vary across cases. Where both sides take in each other's approach and adjust their routines to the informal rules of the collaboration, contextual challenges become manageable and progress is steady. Where this alignment is limited, contextual factors become harder to handle and implementation slows. This explains why similar formal conditions produce different collaboration outcomes and provides a consolidated answer to the main research question.

8.2 Theoretical implications

The findings connect directly to the institutional, collaborative governance, street level, and multi-level perspectives outlined in the literature review. They show how collaboration between Buurkracht and the four municipalities depends on the interaction between formal institutions, informal institutions and the routines that actors develop through repeated interaction.

While the definition of formal institutions fit the thesis well, **informal institutions** left a little room for an addition to the definition. Informal institutions in this thesis are defined as socially shared norms, practices and expectations upheld by peer pressure, trust and reputation (North, 1990; Ostrom, 2009; Hodgson, 2025). These norms evolve through informal channels such as NGO campaigns, neighborhood meetings and media coverage, where questions of whose voices count and how decisions are made surface and feed back into the system (Pesch et al., 2017). The findings show that these informal institutions differ across municipalities. In some cases, norms of direct contact, open communication and predictable access supported collaboration. In others, informal expectations were fragmented or did not match Buurkracht's routines. This confirms that informal institutions shape day to day cooperation and explains why identical formal frameworks led to different results. Although these norms in the literature review were described as usually stable (North, 1990), the findings of this thesis show that informal institutions can shift quickly when collaboration partners adjust their routines in response to practical needs or a need for alignment to tackle contextual challenges. This aligns with Ostrom's (2009) view that rules-in-use evolve through repeated interaction and Hodgson's (2025) argument that informal norms can change rapidly under social pressure.

The **limited presence of Buurkracht in formal documents** can be explained by how intermediary work is structured. Literature shows that intermediaries rarely operate through formal mandates or legally defined tasks. Their contribution depends on adaptive interaction, discretionary problem solving, and relationship building rather than codified procedures (Ehrlich and Cash 1999; Lipsky 2010). These activities take place in meetings, doorstep conversations, and internal coordination moments that are not captured in policy texts. Because municipal documents primarily record formal responsibilities, decision lines, and accountability structures, they tend to reflect only the municipal side of the collaboration. This structural bias in documentation mirrors the role Buurkracht occupies within the governance system. Intermediaries bridge actors and translate information, but they do so in ways that remain outside the formal rule system. As several interviewees noted, much of the work involves informal access, quick adjustments, and situational judgement. These are essential for neighborhood engagement, yet they do not fit easily into administrative formats. The absence of Buurkracht in documents is therefore not a sign of weak collaboration but a result of how intermediaries' function.

Their contribution depends on a flexible position that is difficult to codify without reducing their effectiveness. This helps explain why all four municipalities show the same pattern. Even though the formal structure differs per municipality, the documentation logic remains similar. Formal documents describe municipal authority. Informal routines drive the intermediary work. This makes intermediaries systematically less visible in written sources and structurally more visible in interviews and practice.

Collaborative **governance theory** emphasizes trust, shared understanding, facilitative leadership and iterative processes (Ansell & Gash, 2008; Emerson et al., 2012). The findings confirm these elements but also refine them. The results show that collaboration depends on absorptive collaboration capacity, meaning the ability of partners to take in each other's working style and translate it into their own routines. Municipalities with stable contact points and clear access structures absorbed Buurkracht's approach more easily and vice versa. Municipalities with fragmented internal processes or frequent reorganization found this harder. This links collaborative governance to institutional theory by showing that institutional fit is achieved when informal norms align, not when formal structures match on paper.

Street level bureaucracy perspectives add further insight. Lipsky (2010) argues that frontline practice depends on discretion shaped by local norms and constraints. Buurkracht operates in this discretionary space. The findings show that discretion works when informal norms and local structures support it. In municipalities where neighborhood networks functioned as informal access points, alignment with these structures enabled progress. Where informal norms did not align, discretion could not be used effectively and coordination slowed. These patterns show that street level practice is embedded in institutional environments defined by both formal and informal rules.

Multi-level governance and value driven learning perspectives also relate to the findings. Hill and Hupe (2006) describe governance as an interaction between multiple levels rather than a linear process. Milchram et al. (2019) highlight that shifts in values and learning shape institutional adaptation. The cases show that learning occurred when coordination problems led actors to adjust routines. This matches the idea that institutional change emerges from feedback between governance levels and between formal and informal expectations.

Taken together, the findings contribute to theory in three ways. First, they show that institutional fit depends on alignment across informal institutions, not on formal design alone. Second, they identify absorptive collaboration capacity as a mechanism that links institutional theory, collaborative governance and street level practice. Third, they provide empirical support for a dynamic understanding of informal institutions by showing that norms can shift quickly when collaboration requires adaptation. These insights create several directions for future research, which will be discussed in the next section.

8.3 methodological reflection

The methodological choices in this study shaped how collaboration between Buurkracht and the municipalities could be analyzed. The design relied on two core principles: interviewing actors in pairs to compare roles and perspectives and triangulating multiple data sources to test the consistency of findings.

The paired interview structure described in Section 3.4.1 was central to the analysis. Each municipality was examined through two interviews: one with Buurkracht and one with a municipal official. This design made it possible to compare how both sides described the same processes and to identify where

accounts converged or diverged. The separation of roles mattered. Buurkracht and municipal staff work from different positions in the governance process and interviewing them in pairs made these role differences visible. This helped identify mechanisms such as absorptive collaboration capacity and institutional alignment because mismatches between roles became clear. The paired structure also reduced the risk of drawing conclusions based on a single organizational narrative.

The imbalance between interviews and formal documents affected how triangulation could be applied. Municipal documents offered detailed accounts of formal responsibilities and procedures, but they contained little information about the operational role of Buurkracht. This was not a problem of missing data collection, but a structural feature of how municipalities record their activities. Intermediary work takes place mainly through informal routines, access structures, and discretionary decisions, which are not codified in policy texts. As a result, documents contributed far more to understanding formal institutions than to mapping the work of Buurkracht.

This required greater reliance on interviews for reconstructing informal coordination, trust-building, and role division. The interviews provided consistent and detailed descriptions across cases, but the difference in source type meant that formal and informal institutional layers were unevenly documented. The triangulation process therefore tested alignment between interview statements and municipal documents where possible, while acknowledging that the absence of intermediary roles in documents reflects a systemic characteristic rather than a data gap.

This limitation also shaped how findings about intermediaries were interpreted. The low visibility of Buurkracht in documents is itself a result: it highlights how intermediaries operate outside formal rule systems and rely on flexible interaction in neighborhood work. The methodological reflection therefore underscores that triangulation helped expose not only overlaps between sources but also structural blind spots in formal documentation.

Reliability was supported through a consistent interview format. All interviews followed a semi structured guide covering roles, coordination, communication, access and neighborhood work. Transcriptions were coded using the same coding structure across municipalities. Regular comparison across cases reduced case specific interpretation bias. Interpretation remained part of the analysis, but the coding process increased transparency and reproducibility.

Validity in this study is analytical. The goal was not to generalize findings to all Dutch municipalities but to develop plausible explanations for variation under a shared national framework. The inclusion of municipalities with different scales, organizational structures and working cultures provided enough variation to identify recurring mechanisms.

Ethical guidelines were followed. Participation was voluntary and interviewees were informed about data use and anonymity. The interviews focused on professional roles rather than personal experiences, which limited ethical risks.

Overall, the methodology provided a solid basis for analyzing how formal frameworks, informal routines, and contextual conditions interact within municipal–intermediary collaboration. While some data sources proved less informative than anticipated, the paired interview approach, systematic triangulation, and structured cross case comparison ensured that the findings are well grounded in both empirical patterns and the study's analytical framework. Of course, not everything that was

interesting was fully researched, therefore the next section outlines specifics that could be studied in the future.

8.4 Future research

The findings of this study highlight several promising directions for further research on collaborative governance and intermediary roles in the heating transition. While the comparative design provided valuable insights into how formal, informal, and contextual factors shape collaboration, it also revealed gaps that warrant deeper or longer-term investigation. Future research could extend this work along three main lines: temporal development, comparative expansion, and methodological innovation.

The first direction concerns the **temporal dimension of collaboration**. This study captured municipalities and Buurkracht during an early and formative phase of the BZK12 program, when roles, routines, and expectations were still evolving. Follow-up research could examine how these collaborations develop once the program ends and temporary funding structures are replaced by more permanent arrangements. Longitudinal analysis would make it possible to assess whether early trust-based cooperation becomes institutionalized, whether neighborhood teams continue to function independently, and how lessons from the pilot phase are integrated into municipal policy. Such studies could reveal the durability of collaborative arrangements and provide insight into how temporary experimental projects can transition into long-term governance structures.

A second direction involves **broadening the comparative scope**. The present study focused on four municipalities that differ in size, governance culture, and capacity, but all operate within the same national context. Expanding the analysis to include additional municipalities, particularly rural regions, growth centers, or municipalities that collaborate with different intermediaries—could test the transferability of the identified mechanisms. Comparative studies beyond the heating transition, for example in local mobility or climate adaptation projects, could also clarify whether concepts such as absorptive capacity, institutional fit, and engagement density hold explanatory value across policy domains. Such research would help determine to what extent the findings of this thesis reflect broader patterns of participatory governance in the Netherlands.

A third direction lies in **methodological deepening**. While this study's qualitative approach allowed for a detailed examination of relational and institutional mechanisms, future research could complement this with quantitative or mixed-method designs. Network analysis could map the structure and intensity of connections between municipal departments, intermediaries, and neighborhood teams, offering a measurable view of engagement density and coordination. Surveys could capture the perspectives of residents and local stakeholders, providing a more complete picture of how collaboration is experienced beyond institutional actors. Longitudinal data collection could trace changes in trust, participation, and policy alignment over time, turning the dynamic insights of this study into empirically testable hypotheses.

Finally, further research could explore **policy design and governance learning** at the national level. The BZK12 framework illustrates both the strengths and limitations of uniform program design. Future studies could analyze how national ministries adapt funding instruments, monitoring systems, and guidance mechanisms to accommodate local variation in scale and capacity. Such work would contribute to the development of adaptive, differentiated frameworks that balance consistency with local autonomy. An issue that extends well beyond the heating transition and applies to participatory climate governance more broadly.

In summary, future research should move beyond isolated project analysis toward understanding the **evolution and institutionalization** of collaborative governance. By extending the temporal horizon, expanding the comparative scope, and integrating complementary methods, subsequent studies can build on this thesis's insights and further clarify how local and national actors can jointly sustain socially embedded energy transitions.

8.5 Opportunity to field test results

Towards the end of writing this thesis, a unique opportunity presented itself. The yearly 'intervisiebijkomst' was held at the Buurkracht office. This is a meeting with all participants of the BZK12 project present and is held to discuss progress. One of the municipalities asked Buurkracht if there were already some results for this thesis and if I (the author) could present them. Even though the results were preliminary, it provided a good opportunity to test if all parties could recognize the results. Most importantly the concepts mentioned in the discussion: **absorptive collaboration capacity** and **institutional fit** and the idea that letting the context dictate informal relationships does not work and that they should be aligned first so that both parties can tackle the context together. These concepts were first defined I the same manner as in 8.1.3 and then illustrated with the same two examples mentioned this discussion. The set up was a 5-10 minute presentation, with a 20-25 minute discussion between all parties afterwards. The things mentioned in this section were all comments made by Buurkracht and the municipalities during this discussion.

The field testing feedback supports the ideas presented and adds practical observations from actors involved in municipal heating projects. The comments show that collaboration is shaped by relationships, timing and the ability to stay aligned during the process. These reflections confirm that institutional fit develops through repeated interaction, not through formal planning alone. A first insight is that starting work too quickly creates problems. Respondents noted that "gewoon gaan rennen werkt niet" or just starting to run does not work because initial momentum without shared routines leads to confusion. This supports the finding that collaboration requires early alignment of expectations and working styles. The remark about a "slag gemist" or missing a part, shows that missing early coordination moments can shape the rest of the process.

A second insight is that the most important early outcome is building a relationship. Field testers described relationship building as "de grootste winst" or the biggest win. This matches the thesis finding that informal institutions such as trust, access and predictable communication shape the pace of collaboration. The emphasis on "contact is super belangrijk" contact is super important, confirms that stable interaction routines are central.

Third, the field testers point to the need for continuous proximity between partners. Comments such as "constant bij elkaar komen te weinig gezien" or there was too little coming together to discuss progress. This highlight that staying in contact prevents misalignment. This strengthens the finding that absorptive collaboration capacity depends on repeated interaction and routine matching.

Fourth, the reflections show that collaboration is experienced as a learning process. The remark that collaboration must "organisch groeien" or grow organically and that partners must "vertrouwen bouwen, je tijd gunnen" give trust time to build, matches the thesis finding that informal norms evolve as partners adjust their routines. The feedback also highlights the importance of alignment between frontline staff and formal decision bodies. Respondents mentioned a recurring tension between "uitvoering" or implementation and "stuurgroep" or the steering committee. This confirms the

identified pattern that formal structures and informal routines do not always fit. It also shows why institutional fit requires attention to both levels.

One very interesting example was a comparison between Boxtel and Sint-Michielsgestel and Zaanstad. Boxtel and Sint-Michielsgestel have one municipal worker dedicating 70% of their time to this project, while also having produced the most notable results. Partially due to the informal collaboration way of working existent in the municipality, with both parties describing the collaboration as build on trust and personal contact. Zaanstad however, had a rough start, with a misalignment of informal institutions being present. Once they made clear that the municipality had a very hands off way off working and communicated this with Buurkracht, who gained more decision making discretion A big leap in progress was made. Both examples show that aligning the informal institutions can have significant impact on the progress, albeit in very different ways.

Overall, the field testing comments reinforce the main mechanisms identified in the comparative analysis. They confirm that collaboration depends on the alignment of informal routines, the ability to stay close during the process, and the capacity of organizations to absorb each other's working styles. They also underline that formal structures alone cannot ensure progress if informal institutions and existing networks are not considered.

9. Conclusion

This thesis examined how collaboration between Buurkracht and four municipalities develops within the Dutch heating transition. The analysis showed that collaboration is shaped by the interaction between formal institutions, informal institutions and the working routines that actors develop over time. The findings provide a clear explanation for why collaboration differs under the same national framework and what this means for local governance of the heating transition.

The study confirms that formal institutions such as the HTV and subsidy agreements create a shared structure for all municipalities. These rules are enforceable and shaped through planning reviews and formal assessments (North, 1990; Hodgson, 2025; Pesch et al., 2017). However, the formal framework alone does not explain differences in collaboration. The key variation arises from informal institutions: norms of communication, expectations about access, trust, and established neighborhood practices. These norms are enforced through social expectations and can shift when organizations adjust their routines (Ostrom, 2009; Hodgson, 2025).

Two mechanisms explain the observed variation across municipalities. The first is **absorptive collaboration capacity**, the ability of actors to take in the working style of a partner and translate it into their own routines. The second is **institutional fit**, the degree to which informal expectations and working habits align. Municipalities with stable access points and predictable communication routines were able to integrate Buurkracht's approach more easily. Municipalities with fragmented structures or shifting responsibilities experienced slower progress. These mechanisms explain why similar formal conditions still lead to different outcomes.

The findings also show that collaboration is not static. Informal expectations, access structures and decision routines shifted during the project. This supports a dynamic understanding of institutional change, in which informal norms evolve through practice and create feedback loops into formal arrangements (Pesch et al., 2017). These shifts are not random; they depend on whether actors can adjust to each other's routines.

From a societal perspective, the findings speak to broader issues in the heating transition. Municipalities face pressure to move from strategic planning to concrete neighborhood-level action. This requires not only technical solutions but also organizational adjustments that allow intermediaries, municipal staff and residents to work together. The results show that the heating transition is slowed not only by infrastructure constraints but also by mismatches in routines, unclear access structures and inconsistent use of informal networks.

Similarly, the findings show that the heating transition evolves within a system where responsibilities and expectations are distributed across several levels of government and society. Progress in neighborhoods depends on how municipal procedures, intermediary methods and resident responses interact in daily practice. The results also illustrate that the transition relies on many actors working at different levels, each with their own routines and constraints. This creates a system where progress depends on how well these layers align, making the transition a collective societal process rather than only a technical or administrative task.

Additionally, the limited visibility of intermediaries contributes to a wider structural issue in the policy making of the heating transition. The work depends on a network of actors whose contributions are not recorded in the same way. Municipalities document formal responsibilities, while intermediaries

operate through informal routines that do not enter official texts. This creates a system where important parts of the collaboration are carried out in practice but remain absent from written frameworks.

The thesis also highlights a policy relevance. National programs such as the BZK12 framework offer clear guidance but assume that municipalities can translate broad requirements into daily practice. The findings show that this translation depends on internal capacity, informal routines and the ability to absorb external approaches. National strategies that do not consider this may create uniform expectations that cannot be met in the same way everywhere. The findings therefore support the need for differentiated support based on municipal capacity and governance structure.

The study also contributes to debates about the role of intermediaries in public governance. Buurkracht functions as an intermediary actor that enters neighborhoods and connects municipal goals to resident concerns. The findings show that this role is effective when municipal routines align with the intermediary's working style. When alignment is weak, intermediaries cannot compensate for institutional fragmentation. This insight matters for broader climate and energy policies that rely on intermediaries to bridge gaps between government and society.

The analysis also raises a practical issue for municipalities. Many neighborhoods already contain active networks, welfare organizations or informal leaders. Collaboration is more effective when these structures are used. When they are ignored, progress slows. This indicates that the heating transition is not only a technical or financial challenge but also a social and organizational challenge that relies on working with existing community structures.

In summary, the thesis shows that collaboration in the heating transition depends on alignment between formal frameworks, informal institutions, the context and the working routines of organizations. Absorptive collaboration capacity and institutional fit are central to explaining differences across municipalities. These insights help clarify why neighborhood-based implementation is challenging and point to improvements in program design, organizational coordination and the use of intermediary roles. The findings emphasize that the heating transition is not only an infrastructure project but also an institutional one that requires careful attention to routines, relationships and learning.

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Appendix A interview protocols English and Dutch

English Version

Role & Involvement

1. What is your role in the heating transition, and which tasks or responsibilities do you have in relation to the local heating plans?

2. How do you and your organization collaborate with Buurkracht / the municipality in practice (for example in drafting plans, engaging residents, or coordinating projects)?

Formal Institutions

3. Which rules, policies, or plans shape your collaboration with Buurkracht?

Informal Institutions

4. Which unwritten norms, habits, or expectations influence the collaboration? Have you noticed anything not formally written down that still shapes how you work together?

Context

Short questions answer in a list

5. Which physical aspects of your municipality (for example: housing types, density, or available heat sources) influence the collaboration?

6. Which social factors, such as resident engagement, trust, or energy poverty, play a role in the collaboration?

7. Which political factors, like local priorities, council decisions, or leadership, affect how you work together?

8. Which financial or economic factors (for example: funding, investments, or affordability for residents) shape the collaboration?

9. Are there any other factors that you deem important?

Collaboration & Barriers

10. How do you feel the collaboration is going?

11. Can you recall a moment when collaboration went especially well or poorly?

Short question answer in a list

12. What is working and what is not working according to your expectations?

Common problems

13. Affordability is a recurring challenge in the heating transition. How do Buurkracht and the municipality work together to ensure the transition remains financially feasible for residents?

14. Was engaging citizens hard before? Has Buurkracht been helping and to what degree?

Reflections

15. Have you worked with other organizations similar to Buurkracht and did that compare to the collaboration you are currently in?

16. Is there anyone else who can be interesting to interview?

Dutch Version

Rol & Betrokkenheid

1. Wat is uw rol in de heating transition , en welke taken of verantwoordelijkheden heeft u daarbij?

2. Hoe werkt u of uw organisatie samen met Buurkracht / de gemeente in de praktijk (bijvoorbeeld bij het maken van plannen, het betrekken van bewoners of het uitvoeren van projecten)?

Formele afspraken

3. Welke regels, afspraken of plannen zijn belangrijk voor de samenwerking met Buurkracht?

Informele gewoontes

4. Zijn er ongeschreven regels, gewoontes of verwachtingen die de samenwerking beïnvloeden?

Context (korte vragen, mag in een lijstje)

5. Welke kenmerken van de gemeente zelf (zoals woningtypen, dichtheid of beschikbare warmtebronnen) spelen een rol in de samenwerking?

6. Welke sociale factoren, zoals de betrokkenheid van bewoners, vertrouwen of energiearmoede, hebben invloed?

7. Welke politieke factoren, bijvoorbeeld lokale prioriteiten of besluiten in de gemeenteraad, merkt u in de samenwerking?

8. Welke financiële of economische zaken (zoals subsidies, investeringen of betaalbaarheid voor bewoners) spelen mee?

9. Zijn er nog andere zaken die volgens u belangrijk zijn?

Samenwerking & Obstakels

10. Hoe ervaart u de samenwerking met Buurkracht op dit moment?

11. Kunt u een situatie noemen waarin de samenwerking juist heel goed of juist lastig verliep?

(korte vraag, mag in een lijstje)

12. Wat gaat er volgens u goed, en wat minder goed?

Gezamenlijke uitdagingen

13. Betaalbaarheid is overal een uitdaging. Hoe proberen Buurkracht en de gemeente samen te zorgen dat de overgang betaalbaar blijft voor bewoners?

14. Het betrekken van bewoners kan lastig zijn. Hoe helpt Buurkracht hierbij, en in welke mate?

Terugblik & Vooruitkijk

15. Heeft u eerder met andere organisaties gewerkt die lijken op Buurkracht? Hoe verschilt dat van de samenwerking die u nu ervaart?

16. Is er iemand anders waarvan u denkt dat ik die ook zou moeten spreken?

Appendix B Ai statement

AI statement Hereby I (the author) state that this thesis is my own work. During parts of this thesis, I was supported by the AI tools. For example, by text drafting, summarizing, translations and editing. The author made all analysis, interpretations and final decisions. The AI tools did not generate research findings or conduct data analysis, and all sources and interview materials were reviewed and verified by the author