

Barriers to **green** participation:

*A study into the city-citizen interactions
in Groningen's sustainability projects*



(City Voedsel, n.a.)

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Abstract

This thesis explores city-citizen interactions in Groningen regarding participation in green adaptation projects. Green adaptation in the context of the thesis refers to projects that impact the cities green environment while also impacting its social elements. The case studies looked at take place on different levels of citizen and governmental participation, allowing to understand the differences that occur at each stage. These case studies are: Operatie Steenbreek, Eetbaar Groningen and Vitamine G. The study used data from in-depth interviews with local authorities and participants of community-based initiatives. The results allow for the identification of six barriers to citizen participation at different levels. These barriers come both from citizens and the local government. By exploring these, the thesis also recognizes existing inequalities in the current sustainability participation process in Groningen. Together with an analysis of policy documents, the thesis's observation creates a better understanding of the citizen's perceived role in sustainable development and climate change adaptation and explores the role of the municipality in reducing these barriers and the existing inequalities these barriers create.

Key words: participation, collaboration, sustainable adaptations, citizen inequality, urban governance

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1. Introduction

Globally the percentage of urban areas is increasing, diminishing the number of citizens living in rural areas, with the estimation that by 2025 at least 70% of the population will be living in an urban area (Broto, 2017). Such an increase puts a strain on cities, as a constant increase in urbanization also means a bigger demand on energy, water, mobility, health, etc. (Musango et al., 2020). To minimize the impact of this development, an urban sustainability transition is needed to tackle the challenge to urbanization in cities (Broto, 2017). Such urban sustainability transition is overly complex, there is an agreed need for change, while at the same time generating collective complications as there are commercial, economic, and social barriers included (Truffer et al., 2012). The increasing complexity is a danger to sustainable urban development as it creates new obstacles to the existing systems, meaning that existing governance and citizen roles are challenged, questioning the effectiveness of such changes, and requiring systems and their methods to be revisited (Wamsler, 2016).

A dualism has appeared in governance methods between ‘top-down’ and ‘bottom-up’ approaches leading to a variety of approaches and methods in between (Mees et al., 2019). There are no blueprints on a successful urban sustainability transition, since these trajectories are dependent on endogenous and exogenous city-specific factors such as local policies, practices, and individual goals (Broto, 2017). Cities are currently answering the challenges of climate change by re-thinking past approaches and looking at international examples and their successes and failures of national policies and projects, it is a continuous process that requires constant revisiting to be successful in a cities unique local context (Bulkeley et al., 2014; Baycan-Levent et al., 2009). Governments must avoid a ‘copy-paste’ form of implementation as it has led to criticism of projects and their ‘top-down’ management. It can be especially the case when citizens are affected, non-contextual projects tend to make citizens feel uninvolved (Fraser et al., 2006). Lately, contemporary planning has had a stronger focus on the processes of participation and collaboration with citizens, here the aim is bringing together the ideas of the public and community stakeholders together with the strategies of spatial planning and administrative experts. (El Asmar et al., 2012; Fraser et al., 2006). Yet, the complexity of these interactions and the context reliance has led to difficult understanding as to what approach leads to the best results (El Asmar et al., 2012). Recently, the concept of collaboration has been used increasingly by governments regarding the creation of policies and projects as it is able to involve both citizens and governments in a process of co-creation. The consensus in literature that looks at citizen responses suggests that embracing collaborative and participatory approaches as tools for urban planning will allow for projects/policies that benefit the long-term development of the city (Wamsler, 2016).

With the increase of collaboration and participation in projects, the role of citizens has transitioned as well. Their knowledge has allowed for their input to be valuable in solving context specific complexities. If managed properly, projects and policies that involve citizens input are increasingly valuable as they also provide knowledge and ground for future plans, where past interactions can shape stronger collaboration (Mees et al., 2019). Therefore, developing a collaborative and understanding relationship is of importance for long-term success. Yet, criticisms associated with weak collaboration plans has increased with its implementation. Citizens’ interactions are often seen as a check in a list rather than continual interaction and involvement, creating scenarios where their involvement is short and targeted (Wamsler, 2016). Increasing studies have brought the importance of equal participation and

opportunities regarding collaboration, where increased information and knowledge are the center of concern for both researchers and citizens (Wamsler, 2020).

1.1. Research problem and question

As with many theories, the implementation is where complications arise, the doubt remains ongoing on the long-term effectiveness of participation processes, and the different types of effects it has going up the level of complexity. With the associated complexity to the transition so does the complexity of knowledge around the subject also increase. With constant changes to policies and increasing knowledge government have it becomes important to understand the impact of current projects. But further than that, the thesis aims at understanding the social effects that sustainable development projects have on its citizens. Adding to the need for knowledge regarding the effects of participation and understanding how cities can adapt their pre-existing strategies, the roles of planning experts and their policy priorities can bring benefits to the citizens. The overarching aim of the study is to further explore city-citizen interactions, creating a better understanding of the citizens' perceived roles in sustainable development at different levels. To understand it, it requires an attention to their knowledge (and specifically the possible lack thereof) on collaborative policies in their city. The study further explores the themes of knowledge inequality and the right of citizens by looking at how citizens perceive their role in these city-citizen interactions. Accordingly, the main research question of this study is as follows:

How do barriers to participation and collaboration limit sustainable development adaptations in the city of Groningen, the Netherlands?

In order to answer this overarching research question, I also came up with three secondary research questions:

- *To what extent does participation affect the citizens feeling of equality in climate adaptation plans?*
- *How is the role of the government perceived in different sustainable development interactions in the city?*
- *To what extent is there urgency in increasing citizen participation for different members of the community?*

1.2. Structure of the thesis

Understanding the roles and perceptions of citizen participation is complex since, it involves different actors interacting at various different levels. Therefore, comprehending the theory behind these concepts will allow to understand the perspectives of citizens better. The thesis first looks at the literature on current transition in sustainable urban development, to place where the need for citizen interactions has come from. Secondly, it explores the literatures on participatory and collaborative planning and the specific roles of citizens and government in these, and to what extent they are flexible. Consequently, it also looks at the concept of inclusivity as an important aspect that must be considered in sustainable development, aiming at understanding the responsibilities that the government has in creating such an environment. After the theoretical framework, I present my methodology which is based on semi-structured interviews with citizens participating in the projects of Operatie Steenbreek, Eetbaar Groningen and Vitamine G. Furthermore, also having in-depth interviews with both citizen and municipal experts. This section is followed by the findings across six categories which

eventually lead the reader to my discussion. I conclude the thesis by synthesizing the key findings and offering future research directions.

2. Theoretical Framework

1.1. Sustainable urban development

To understand where the need for citizen involvement comes from, we must place it in the current sustainability transition, which refers to a long-term change in a given system, a shift from what is considered the dominant ‘rules of the game’ to a new equilibrium (Broto, 2017; Meadowcroft, 2009). The management of such a transition involves the consideration and conscious effort to guide the transition to the pathways that have been determined (Meadowcroft, 2009). Currently, one of the largest transitions is towards sustainable development, a complex category that can be divided into multiple subjects and categories. One of these being the urban sustainable transition, which aims at tackling urbanization and its impact on both climate change and societal needs (Broto, 2017).

Socially and politically, there is a focus on urban energy transitions since non-renewable energy systems have proven to be one of the largest influences in global climate change (Musango et al., 2020). A well know example of a sustainable transition is in the energy sector, organizations working closely with the fossil fuel industry are involved in perusing greener pathways through pressure from global stakeholders and society in general (Meadowcroft, 2009). Countries are attempting to change the trajectory/path of emissions and have concluded that socio-ecological and socio-technical systems that follow a coevolutionary trajectory should be encouraged as these can create a future that offers change opportunities (Broto, 2017). While various solutions require technocentric approaches, and top-down large-scale infrastructural interventions, there also lies a solution in the societal interactions which can shape how citizens interact with sustainability.

Attaining sustainable development requires transformation in various areas, especially a large shift in human-ecological relations and in patterns of production and consumption in society (Broto, 2017). In urban areas this means a change in the relationship between urban societies, resource systems that have been created and technologies and structures that influence the daily lives of citizens (Broto, 2017). Changing these structures will allow for gradual change in society, that will further allow for the development and use of sustainable methods (Dempsey et al., 2012). By changing such structures, it affects the daily lives of citizens, altering their roles and their perceptions on a constant basis. Urban area solutions present complex issues such as their dependency on scale and context, the permanence of structural solutions to the built environment and ultimately the interlinked cultures and lifestyles of the citizens (Broto, 2017). Therefore, interventions require a good grip on the ongoing processes in all layers of the issue.

When it comes to transitions in urban sustainability there are multiple subsections that fall under such a large topic. When thinking of an urban area and its transition, many factors come into play such as: water, energy, citizens, sanitation, mobility, transportation, education, etc. (Dempsey et al., 2012). All under large populations and areas. It is a continual list of aspects that are intertwined and influence each other which shows the importance of the urban sustainability transition (Broto, 2017). The ability of identifying the right strategy to adapt towards urban sustainability is a challenge that all cities worldwide share (Chu et al.,

2017). The majority of approaches to further sustainable development in the last decade have been from a top-down perspective (Fraser et al., 2006). Majorly as such an approach was common, but also projects from such a planning perspective are easier to implement as they include singular goals with a mostly pre-determined result (Fraser et al. 2006; Chu et al. 2017). Furthermore, it is proven to bring results, especially in the infrastructure sector where large projects are implemented such as dikes or waterways. Yet, as the realization came that the sustainable transition covered various layers, especially societal the drawbacks also became more evident. Top-down projects mainly lacked inclusivity, especially in times where adaptive planning and community engagement were not a common practice in planning, leaving citizens excluded from decisions (Alexander, 2005).

This is where the importance of collaboration and participation comes into the transition. Modern environmental planning and management literatures has continued to stress the need for further community involvement to enhance top-down planning, but also develop bottom-up theory that can further allow for a transition that will take into consideration long-term needs in society, not only environmentally but also politically and socially (Fraser et al. 2006). What has been off putting for citizens is the previously mentioned complexity, and that drawing a line between the two (top/bottom development) creates large responsibilities for citizens, which they feel unprepared for (Hugel & Davies, 2020). Yet, bottom-up development should not be considered an anti-movement from top-down approaches, rather, the interplay, balance, and use of both has brought forth the solutions that have been most adaptive and long-term visioned (El Asmar et al. 2012).

1.2. Climate change adaptation

Climate change adaptations are considered the form of moving the transition forward. Adaptations are defined as changes in the social-ecological systems as a response to the current and future expected changes in climate and non-climatic environment (Moser & Ekstrom, 2010). More specifically, adaptations throughout this thesis will refer to projects that have an impact on the urban sustainable development, therefore having a social and environmental impact. An important distinction is between autonomous and planned adaptation. The difference is that autonomous adaptations are initiatives taken by individuals or private households instead of planned adaptations which are led by the government or stakeholder parties (Wamsler, 2016). The impact on sustainability can be larger through the involvement of the government or other stakeholders as the reach is larger, yet the impact socially can be larger through private adaptation as the citizens feels empowered through their own changes (Pelling et al., 2015). Both private or public adaptation are a response to actual or expected climate changes, either consciously or unconsciously, most importantly, it is important to achieve transformative adaptation instead of simple incremental changes to achieve a complete change in sustainability (Pelling et al., 2015). Focusing on such an approach will show the importance of smaller changes in urban sustainable development, if done together with larger adaptations the overall result will be more effective. *Figure 1* below by Moser & Ekstrom (2010) demonstrates the differences in efforts required and their relationship with time to achieve effects with adaptations in climate change, it demonstrates that current paradigm shift and the need for incremental changes to reach a system transformation. This figure becomes an important tool to look at how the case studies used in the thesis fit in the scope of the transformation, and how these different scales ultimately impact citizen participation. Ultimately, the scope of adjustments and their time of effectiveness becomes increasingly important when including citizens, if the amount of time

citizens have to invest is large yet, the scope of adaptation and its effect is small, it will deter citizens to participate (Moser & Ekstrom, 2010).

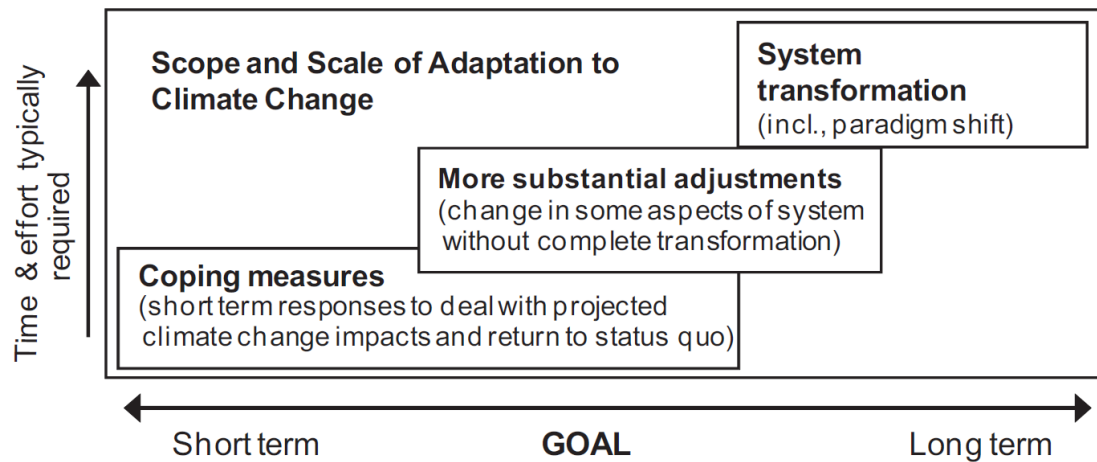


Figure 1 - Scope and scale of adaptation to climate change (Moser & Ekstrom, 2010).

Under the idea of climate adaptation there have been various theories developed that relate to different governance arrangements that include both individual and public adaptation, such as: co-production, co-creation, collaborative/participatory governance, adaptive governance, community development adaptation, etc. (Wamsler, 2016). These concepts are part of the sustainable development transition as through their understanding, policies and projects can be developed. These different governance methods share various similarities, this thesis will look at collaboration and participation as their theory forms the background for other concepts as well. By looking at these two concepts, it allows to understand how citizens role differs depending on the scales of collaboration and participation and the barriers that can arise from these.

1.3. Collaboration

Collaboration and participation vary in their implementation, depending especially on the different characteristics that are faced, for example the division of responsibilities, standard practices, and government involvement (Wamsler, 2016). When talking about interventions and development at the community level, in the majority of cases the initiative is led by the governing body (municipality, province or even by a country policy) (Loveridge et al. 2020). They bear the responsibility of providing citizens with the basic needs and are there to guide cities and regions through their development (Fraser et al. 2006). As mentioned previously, there are instances in planning that require little collaborative involvement, processes that have been finetuned and proven to have little influence on the citizens feeling of involvement and feeling of belonging (Loveridge et al. 2020). For example, the implementation of less energy consuming light posts or cleaning canals to allow for better water flow. The areas that do require collaborative urban planning are those where citizens are involved, this is a large range of possibilities and includes various layers of stakeholders, understanding when collaboration is needed plays a large role in modern day planning (Pupphachai & Zuidema, 2017). Furthermore, participation and collaboration are shifting from an idea of legitimacy and citizen control towards an effective governance tool as it allows for citizens to have

valuable context specific input, therefore increasing the governments understanding for future projects as well (Newig et al., 2018).

Collaborative approaches occur when there is a socio-political engagement among actors that aim at solving an issue, such as in this thesis, sustainable urban development (Brink & Wamsler, 2018). Allowing citizens to work together with the government and other stakeholders in planning issues and implementations in their community, therefore they have a strong voice in the decision-making processes (Brink & Wamsler, 2018). Ultimately, creating a scenario where the responsibilities for climate adaptation are shared and are (re)negotiated, changing previous notions in planning, and creating new opportunities (Brink & Wamsler, 2018). The process of collaboration allows planners to understand and implement the needs of the community, using then resources and time more effectively in the long term (El Asmar et al. 2012).

A critique associated with collaborative arrangements is the lack of concrete evidence to solve environmental problems, and to what extent they offer better solutions over ‘top-down’ approaches (Miller, 2016). The social benefits that it presents are clear, yet the factors that make it an effective tool to solve environmental issues are not (Lamphere & Shefner, 2018). It presents a difficult choice for governments whether or not to follow the choices of collaboration or follow more traditional methods. This creates a tension between the ‘democratic’ and ‘environmental’ ends of governments and where priorities are meant to be set (Newig et al., 2018). Therefore, more studies in different contexts have to provide answers to the effectiveness of such approaches and weigh the long-term benefits. Studies have further found that that adaptation planners rarely consider collaborations with citizens, despite positive adaptation outcomes from related local processes (Brink & Wamsler, 2018). Further highlighting the importance of understanding the existing adaptations and where there is room for improvement in them.

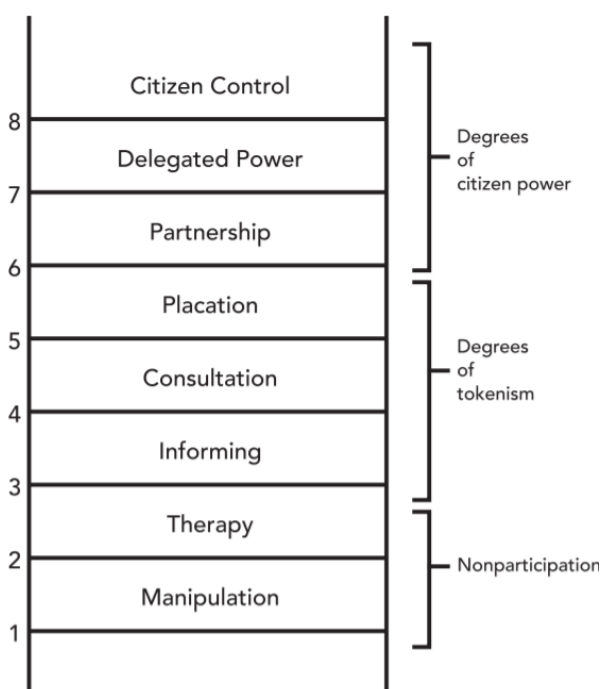
When one talks about collaborative governance, the literature is associated to that of participatory governance as they share various similarities. Collaborative governance focuses more on the process of working together; while participatory governance focuses on involving actors that are not normally included in the decision making (Emerson & Nabatchi, 2015). As explained by Newig et al. (2018) from the perspective of participatory governance, collaborations are one form of interaction out of various. While from the view of collaborative governance, participation is one element out of the many possible. Therefore, the concepts are commonly named together as needed tools when regarding citizen interaction within government projects. This further explains one of the issues with collaboration, it does not imply equal participation opportunities in sustainable development, as not everyone has to be included or given the same opportunities to voice their perspectives to label a project ‘*collaborative*’. Therefore, distinguishing the terms are important, even though collaboration is an important tool, it is important to avoid it becoming a “loose” term used quickly to label a process where participation is key.

1.4. Participation

An important aspect to consider in an ideal collaborative planning, or any approach that puts the citizens in power is that the planners are there to help with their knowledge, not to mandate the goals and wishes of other stakeholders, they are seen as a tool that is able to translate the wishes of multiple stakeholders into an action plan (Dempsey et al. 2012). Yet, this is in an ideal world, where citizens all decide to participate, and the planners are there for

them. Reality can be far from ideal; the focus of the thesis is to further understand at what point citizens decide to participate and their reasoning behind it. The way participation is encouraged, rewarded, and given importance determines the outcomes of citizen involvement in a project (Adger et al., 2009). For the citizens and civil servants, it is important to distinguish where different citizens opinions lie, how to improve and/or use their status when approaching projects and policies (Mascarenhas et al. 2015). Understanding citizens willingness to participate in climate adaptation will allow for more knowledge regarding interactions of the past and in the future. There are three dimensions identified by Newig et al. (2018) used to identify the complexity that can arise with participatory interactions, and how these can increment depending on the level the interaction takes and the role of both citizen and government change.

1. Breadth of involvement – The range of different types of stakeholders and actors that are included and their impact on the process.
2. Communication and collaboration – The way that information flows, and if the government’s view matches the reception of citizens.
3. Power delegation – To what extent each participant is given influence over the future decisions and the source of this power.



*Figure 2 – Citizen Participation Ladder
(Developed by Arnstein, 1969)*

When talking about participation, various theories stem from Arnstein (1968), who developed a ladder of participation (*figure 2*), where eight different distinctions of citizen involvement are distinguished into three categories. From nonparticipation to different degrees of tokenism and ultimately changing degrees of power. The main takeaway is that the citizens in degrees of ‘citizen power’ represent those that are most interested in change and have the power to influence their surroundings. For local authorities, these ranges represent the citizens that will be involved in all steps of the process, therefore identifying, and supporting them will benefit all parties (Arnstein, 1969). Such has been the approach in the last years, understanding key citizen stakeholders that are able to act as an intermediary between citizens and local authorities. It can be helpful in collaborative processes where citizens input is needed, by having a voice from

the community help through the process. It is therefore important to distinguish the different methods of participation one looks for in each project, and the effects of having different levels could have on a project.

Following Arnsteins ladder (1969), there have been various interpretations towards participation and public engagement, the International Association for Public Participation (IAP), has created their own spectrum that looks at five levels from the point of view of

public participation: informing, consulting, involving, collaborating, and empowering citizens. In the paper by Khatabi et al. (2020) they take into consideration only the last three levels as “*genuine*” public engagement tools (involving, collaborating and empowering) as they are more focused on true participation, and the other two are outdated to modern city-citizen interactions. The thesis will also consider these parameters for true participation.

The agreement that participation is beneficial is clear, an issue is that understanding what appropriate participation is, why it is crucial in a particular context and furthermore agreeing on its success is rarely expanded on by governments (Hügel & Davies, 2020). Just because a project exists and offers ways of participating in sustainable development should not qualify it as a successful operation. Sprain (2017) highlights the paradoxical issue in participation, participation happens in places which choose to do so, therefore governments that are inclusive and accommodating to include citizens will provide the opportunity. If done correctly it is seen as a good thing, but there is no clear cohesive agreed approach as what needs to be met to be considered a correct approach (Mascarenhas et al. 2015).

The primary focus of this study is understanding the barriers to participation in adaptation projects, they are defined as obstacles that can be overcome with concentrated effort, alternative management, change in thinking, prioritization and shifts in resources (Moser & Ekstrom, 2010). But most importantly, these barriers are changeable by increasing political will and resources invested, yet, often barriers are seen as a fact, as they can be too costly to overcome, not questioning the adaptability of barriers is in itself a difficult aspect in adaptation processes (Nielsen & Reenberg, 2010). In a study by Buckwalter (2004) it is mentioned that overcoming all existing barriers in an adaptation project does not always lead to a positive result. Yet all barriers should be identified to lead to best practices in such processes to avoid maladaptation in projects that can lead to invisible losses (Moser & Ekstrom, 2010; Turner et al, 2008).

The barriers to participation in adaptations are often bound to three dimensions in literature they are: the ecological and physical limits, economic limits, and technological limits (Adger et al. 2009). For experts, having such limits has the benefit of providing an analytical functionality, as they offer an opportunity to create models for comparison in these areas that are often seen as external influences on adaptations. Yet, the literature agrees that limits to adaptations often come from the *inside* of society, therefore socially constructed, even though they share similarities across adaptation processes, they are defined by their unique context (Adger et al. 2009; Moser & Ekstrom, 2010). Especially in a context such a city, where there is a multitude of contexts overlapping at all times the factors like social class, culture and gender are considered of more importance on whether adaptation projects and strategies are adopted or rejected in a community (Nielsen & Reenberg, 2010). Understanding these barriers in adaptation therefore becomes an increasingly difficult process as the influences are both external and internal, and most importantly contextual.

1.5. Inclusivity and equality in participation

When talking about barriers to participation in adaptation projects, the role of inequality becomes an important factor, understanding the actors and how barriers affect their participation is key to future climate adaptations (Haase et al. 2017). Understanding the role of inclusion and equality in adaptation projects will bring better understanding to the common resource’s citizens share, and how their distribution is affected in different environment (Bulkeley et al. 2013). The resources that are shared in a city should not be

behind a fence of ‘luxury’, the advancements should be shared between all that wish to participate in it. The inequalities behind sustainable development have been in the background as the transition has become highly political and has lost its sight on the social impact (Bulkeley et al 2013; Axon, 2012). With a rise of participation and collaboration in governance, it has also caused a rise in issues regarding exclusion and has raised questions regarding the right and need to participate. A study in Amsterdam by Wolsink (2016) showed that *“Place making decisions are more often legitimized with sustainability claims, and arguments from less convinced residents are denied or remain unexamined”*. As mentioned previously, by unknowingly not including groups of citizens will not accurately represent the full context. Leading to decision making without citizen input, or input that is biased towards citizens that can participate and can have different personal agendas (Drazkiewicz et al. 2015). A study by in three cities in the United States by Lamphere & Shefner (2018) found that sustainable development requires working together across multiple actors in order to achieve a long-term effect, yet as these actors all have different goals and values it creates conflicting scenarios. Showing again the importance of understanding the barriers that exist at different participation levels, and most importantly how the role of citizen power is perceived differently at each level.

In the case of participation in an urban environment, sustainable development, or the lack therefore can lead to a risk full environment (flooding, heat waves, etc.) and participation can lead to a safer living environment. Yet, there are also many cities where environmental risks are few, meaning that the choice of non-participation is a viable and rightful choice as a citizen (Bulkeley et al, 2013). It creates a difficult position for experts to create such projects for people that are less interested, collaborating together to create unique, context dependent forms of participation. Therefore, local authorities, stakeholders and citizens should also be focusing on participation that also highlight the inclusiveness of the project, understanding the views of also those that do not participate (Drazkiewicz et al. 2015). It can be the case that when a community decides to pursue a bottom-up approach, or are given the lead by external parties, some of the citizens decide to not participate due to different barriers. Putting into question the inclusivity and representation of such a project as not all citizens are included and can create ‘us’ and ‘them’ scenarios between participating and non-participating citizens (Axon, 2020). Such situations where individuals feel marginalized and excluded can position the pursuit of sustainable development as harmful for the community environment as well (Axon, 2020; Fraser et al. 2006). Therefore, as with many projects, it remains important for external parties to monitor the aspect of inclusion and equal distribution of information availability to avoid such situations (Ghorbani et al. 2020). Monitoring does not automatically mean that the government or stakeholders have a say, it rather provides the opportunity to understand the process and create better future approaches.

A new line of critique in adaptation participation is that greening has led to higher costs of living among cities that have an intensification of green adaptations (Garcia-Lamarca et al. 2021). Therefore, even though planned urbanization and proper urban planning without the consideration of its future effects on all parts of society can lead to new barriers. This also highlights the existing conflicting relationship that can exist with proper land governance and the stakeholders involved (Cobbinah & Nyame, 2021). While the municipalities’ goal is to increase liveability in an area, companies such as housing commissions aim for profitability. Such diverging interests create a tension for citizens, as they are caught between the benefits of green adaptations and socio-spatial injustices (Haase et al., 2017).

The complexity of inequality increases as the role of power in cities becomes blurrier. Participation gives power, but there are no guarantees to how this power is distributed, meaning that other voices and knowledge can be silenced leading to biased planning (Hügel & Davies, 2020). Literature agrees that to be able to ensure correct climate change adaptation, there must be a procedural and fair way that leads to how participation decisions are selected (Young, 2011). A deterrent, but also a driving factor in participative approaches is the long-term process that it is (Moser, 2010). The inclusion of a variety of groups and resources contributing to one goal is often slow and complicated. This is less attractive to traditional forms of government, where bureaucratic efficiency and economically keen approaches are favored (Hügel & Davies, 2020). The importance of engaging with the citizens and the methods used is therefore important to enable participation.

1.6. Public engagement

The complexity in participation increases by the idea that the larger the number of actors involved, the more difficult the decision making becomes, the harder it is to reach consensus and therefore ultimately implementation; Yet the more people involved the more inclusive creation process of indicators are and therefore the subsequent policies become more effective (Drazkiewicz et al. 2015; Axon, 2012). Citizens seem to be less motivated to be involved in larger scale projects rather than community-based projects as it feels too far from their daily surroundings (Moon, 2016). Communities should be made aware by stakeholders and local authorities about the risks associated to climate change, while at the same time being able to gain knowledge about possible responses and most importantly be empowered to take actions (Khatibi et al., 2021). Therefore, governments themselves must be able to provide different paths for participation and motivate different forms across the board making the engagement of governments is crucial (Newig et al., 2018). The way a municipality is able to engage with citizens therefore must be looked at to understand their role in participation barriers. Along these lines, Khatibi et al. (2021) distinguish three types of dimensions where engagement exist and are important to understand citizens and their behavior (see *Table 1*).

Dimensions	Characteristics	Climate change adaptation
Cognitive	Knowledge/understanding	Citizens understanding about climate change, its causes and what they see as possible solutions. Engaging in collective action, taking responsibility, awareness and creating participation are part of this dimension.
Affective	Emotions/interest	To what extent individuals are concerned about the possible climate change and the impacts. Relates how people engage with the topic, both

		positively, indifferently, and negatively.
Behavioral	Action	Regards the actions citizens take to reduce the impacts of climate change. This includes different methods of participation, enabling sustainable development in their communities, engaging in changes.

Table 1 – Typologies of citizen engagement existing in climate change adaptation (adapted from Khatibi et al. 2021).

Understanding the context where knowledge is created and the process of sharing it allows strengthening the relationship between the governments and the public. But the process of understanding and increasing participation is not easy, similarly to any other collaborative process it is slow and has various barriers. The most common barrier for public engagement and participation in sustainable development is the current governmental structures and their associated mechanisms (Wamsler et al., 2014). Mostly the current power structures and the little motivation given to citizens are the issue, while these are highly important to push participation further (Khatibi et al., 2021). A different barrier is the lack of organization of accountable citizen groups when social dilemmas arise, creating distrust and alienation for groups that did not feel represented (Khatibi et al., 2021). The (dis)trust that citizens feel affects the willingness to participate in sustainable development adaptation, even if it would benefit their daily lives. Understanding where the distrust comes from, and the role the government and media play are important to give space to participation (Hügel & Davies, 2020). Geiger et al. (2017) study implies that simple exposure to the theme of sustainable development is likely to lower behavioral responses and therefore increasing the exposure to public will create more participation. This study will further look at the reception of different interactions, and what the results mean to fostering participation and increasing knowledge. Ultimately attempting to understand the different barriers that exist in participating at different levels.

1.7. Government participation in the Netherlands

The study will use the city of Groningen in the Netherlands as a case study, as collaboration and participation are context dependent, it is important to understand the current governance position regarding climate change adaptations and public engagement. In the Netherlands the role of citizens has been encouraged further by political agendas such as the Dutch National Adaptation Strategy (2016) and the Adaptation Implementation Agenda (2018), here the societal stakeholders such as citizens and citizen organizations are seen as key actors in sustainability adaptations (Mees et al., 2019). The government is especially seen as having a facilitator role by having the necessary resources to promote these changes and activities (Hagger et al. 2017). The issues that remain is understanding the role of the government in different scenarios, and in how far they are able to distance themselves from their role of planning to a role of enabling bottom-up planning.

Just like Arnsteins (1969) ladder of participation, similar models have been made for the governance side, going from government control to letting go. The Dutch Council for Public Administration started focusing on local government participation, the main idea is that the government does not take an initiating role in community initiatives, rather they have a more supporting role, moving down the ladders as much as possible to allow for stronger community collaboration, enabling the citizens with the local authority's knowledge and needed resources to increase the success of the project (ROB, 2012). Whereas, as mentioned previously citizen participation is (co)created by the government and supported by citizens knowledge and input. Therefore, having various degrees of collaboration and participation available. To make it clearer, the Dutch government developed the 'ladder of government participation' which shows different levels of participation and the role of government in community initiatives (Mees et al., 2019). The main goal being that it allows policy makers to distinguish what the 'ideal-role' is, but it is important to understand that in reality these levels overlap and are not as clear as the model might suggest. The study by Mees et al. (2019) further added to the ladder by adding the initiators, coordinators and decision makers, this ladder is shown below in *Table 2*.

Roles for local government	Initiators, coordinators, and decision makers	Practices of local government roles
5. Regulating	Government regulates interventions by the community, initiates, coordinates, and decides (Hierarchical government).	Policy making, organising traditional public participation such as hearings and citizen juries, checking, enforcing regulations, and sanctioning in case of noncompliance.
4. Network Steering	Government (co-) initiates and creates a network of public and private stakeholders; it coordinates the decision-making process. Decisions are co-decided in the network.	Process coordination, fostering of dialogue and negotiation among stakeholders, mediation of interests, arbitration of conflicts, trust building, creation of a level playing field through rules of the game.
2. Stimulating	Government actively stimulates the initiation and continuation of community initiatives. Initiatives coordinate and decide independently from the government.	Provision of structural (financial) support during a longer period.
2. Facilitating/enabling	Initiatives are self initiated, and the government has an interest in making them happen. Initiatives coordinate and decide	Boundary spanning activities that facilitate free flows of ideas, people and resources, while maintaining

	independently from government.	a boundary between the initiative and its institutional environment: Process facilitation, helping the initiative to find its way in the municipal organisation, providing a (very) limited number of resources and relevant information, schooling, and other forms of capacity development.
1. Letting go	Initiatives are self-initiated, Self-coordinated and self-governed without the help of government.	None, government is not participating in any direct way, but indirectly by becoming ambassadors for such initiatives.

Table 2 – Ladder of local government participation and their roles (Mees et al., 2019).

The same study found that in the Netherlands there are three prevailing issues regarding to government participation. Firstly, there is a little flexibility in how municipalities are able to support the citizen initiatives. Secondly, there is uncertainty on the longevity of citizen initiatives and their long-term effectiveness, which can cause lack of motivation to participate. Thirdly, there is a possible increase in citizen inequality as some group initiatives are facilitated while other are not (Mees et al., 2019). These findings show similarities to what was mentioned with the issues of collaboration and participation, the uncertainties with measuring its effectiveness and its long-term impacts and will be further reflected at through this study.

It is important to understand the division of roles of both the government and the citizens. In the Netherlands, the role of water safety is clearly set in rang of ‘regulating’, as there is an obligation by the government to guarantee the citizens safety and going lower in the rang will not have benefits in the adaptation. Therefore, it is difficult to see the benefits in such large-scale adaptation plans. Where adaptation is able to shine is the local level, where the measures can be seen and monitored locally based on each context (Grasso, 2010). The thesis focuses on adaptations in the green infrastructure of the city, a level where citizen lives is benefitted directly on a daily basis and therefore important to be understood at all levels of governance (Urwin & Jordan, 2015). For example, citizens are able to start initiatives that benefit green adaptation and develop the communities, and this should be fully supported, yet the issue arises that in the absence of citizen motivation or agency, the government must still be able to participate and take control of situation to guarantee development (Adger et al., 2009). The balancing of roles is taking a more prominent role in governance, and it is beneficial if both citizens and the government understand what changes can be made and where to lower themselves in the ranks of government participation.

2.7. Conceptual Model

Based on the above literature, various themes emerge to be able to understand participation in a project, and some of the important factors that determine its success allowing for a

conceptual model that structures the further steps of the study. The literature distinguishes two important sides that lead to individual participation, the governance side, and the personal side. The governance side refers to the processes that allow for the existence and involvement within a project, these are based on Newig et al. (2018) study, with the addition of the government participation ladder from Mees et al. (2019), these two cover various aspects that influence the perception of a project and the influence it can have on a citizen's decision. On the other hand, the conceptual model represents the citizens behavioral dimensions developed by Axon (2017) which can play an important role in determining individual choices regarding participation. The conceptual model shows these two sides converging to a decision of involvement or no involvement, which is an important aspect of the study as well, to look at those that choose not to be involved in a project and what the reasons and barriers are for this decision.

Being able to contrast these between different projects allows experts to better comprehend the barriers that exist and where they stem from. As mentioned previously, the difficulty of quantifying participation exists, therefore the model aims to guide the thesis in gathering empirical results through qualitative methods that identify recurring themes, emotions, and perceptions on the subject. Therefore, creating unique combinations leading to very different results. By understanding the contextual barriers together with the current governance methods will allow for stronger understanding of existing barriers on the context that is chosen.

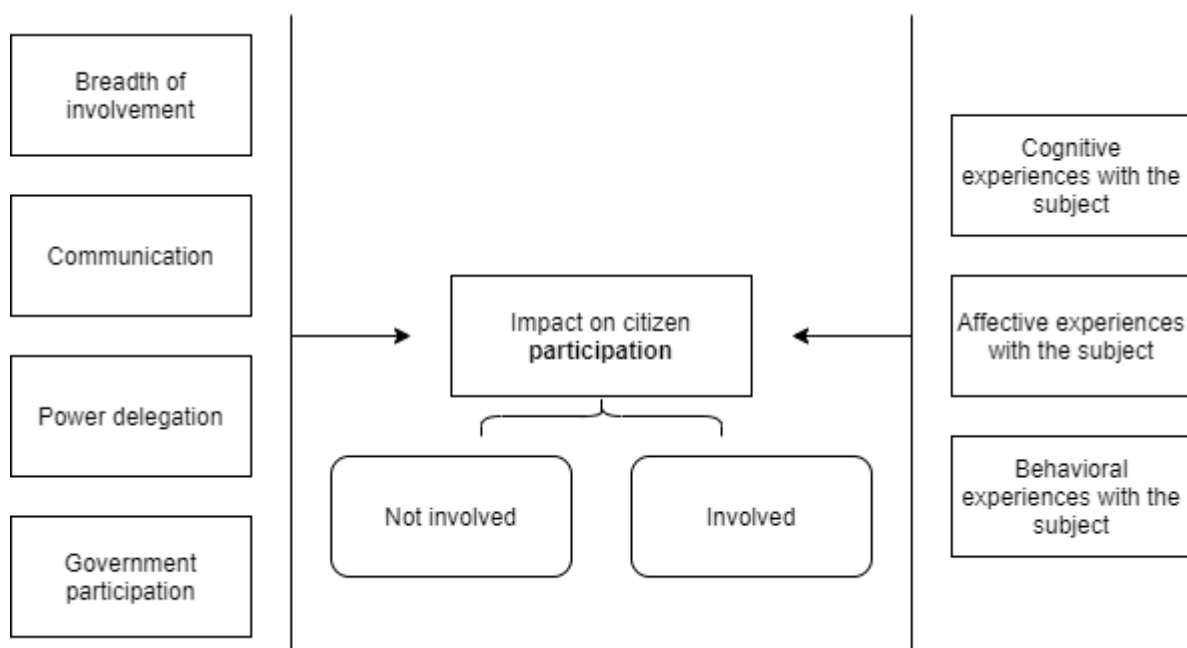


Figure 3 – Conceptual model for the thesis (Author, 2021 – based on studies by Newig et al. (2018) and Axon (2017)).

3. Methodology

The aim of this study is to understand the different sustainable adaptation interactions that occur in the city of Groningen, and the existing barriers that limit participation and collaboration for the citizens. By doing so, the study looks at gaining knowledge in how the municipality can increase their impact and make their processes more accessible towards citizens. Further looking into the flexibility of the government role regarding the implementation of urban sustainable development from a collaborative and inclusive point of view. Lastly the study aims at contributing to further understanding the impact on the citizens feeling of equality in a growing urban area.

The comparative qualitative case study research presented here is based on in-depth conversational interviews based in case studies in the city of Groningen. In order to get better insight on the existing barriers in participation in sustainable adaptations, 19 semi-structured in-depth interviews were conducted with a variety of citizens of the city of Groningen. In order to sample the population for these interviews purposive sampling is used, specifically criterion sampling. This means using the cases described in the case study section to find individuals that participate in these to be able to share their experience (Given, 2008). To further enhance the method, a snowballing sampling technique is also used, therefore for each case study an initial small pool is used and from there more participants that are eligible can be discovered and considered for the study (Given, 2008). Such a method helps the study find hidden populations of citizens that participate, as in examples of little participation they can be harder to distinguish.

To avoid bias in the initial respondents, the initial set of interviewees are meant to be as diverse as possible, therefore from different areas of the city and engaged or in other cases engaged in similar projects but alternative locations. Additionally, the interviewees used for a specific case are also asked about the other cases in the study, if they do participate, they can provide further knowledge on their participation in such projects. In the case that they do not, their answer can provide an opportunity to further understand the barriers of other projects, either if they do know the projects but choose not to participate, or they do not know about them, the reasoning behind their decision can be understood.

The citizen interviews followed a semi-structured format following a pre-determined questionnaire (Appendix 1), while the expert interviews follow a conversational format with certain themes as leading points. Semi-structured conversational interviews were done by asking predetermined but open-ended questions to the interviewees, meaning that the researcher is in control of the interview but there is no limit to the responses (Given, 2008). The data collection took place in November and December of 2021, and the interviews were conducted at different time periods during these months. The language of the interview was Dutch if this was the interviewee most comfortable language, to ensure that they had the most flexibility to express themselves. In the case that Dutch was not an option, English was chosen. The interviews are recorded using a mobile phone recorder in the case of expert interviews, while citizen interviews notes were taken and put into an excel sheet with a variety of questions (see Appendix 5). The interviewees are also given a consent form (see Appendix 2) that ensures the safety of the data and their anonymity. The transcripts of the expert interviews are not included in the appendix as the relevant data is taken out already if there is interest in them contact the author.

The first step in analysis was to transcribe all the interviews, it was therefore important that the translation remained as true as possible, and the emotions associated were not lost.

Therefore, the expert interviews are left in their original language and the quotes used in the result section are translated. While the notes of the citizen interviews are translated to English as the aim is to identify patterns based on the conceptual model's themes, therefore looking at the external and internal influences. Combining both methods allowed for the identification of the barriers and their impact on participation based on the identification of overlapping themes and the authors perception.

Having only in-depth interviews can create a conflict as there is reliance on the participants ability to remember and their ability to explain their perception (Given, 2008). Furthermore, it challenges the interviewer to ask the correct questions and be able to navigate a conversation without being biased (Given, 2008). With the combination of desk research and multiple perspectives it limits the criticisms on the method which still remains effective for uncovering themes based on the context. Furthermore, by looking at context specific cases in the city of Groningen, the research has limited its generalization beyond the sample group itself, but this is acknowledged as a general limitation in participation research. Overall, the study aims at providing context specific barriers to participation as well as general barriers which can be interpreted as a larger category.

Lastly, for a study that is close to citizens emotions and perceptions, it is also important to understand the current national context politically and socially. The study takes place in the COVID-19 pandemic that started in 2019. The pandemic has caused a change in regular social patterns such as community meetings or reduce participation as it brought health risks. Furthermore, it has caused for an increased distrust towards the national government (NOS, 2020), which can affect the citizen motivation at local levels as well. Furthermore, politically there have been various cases of government mistrust (*Toeslagen affaire* for example) which can lead to the interviews taking a political turn, even though the lack of government trust can be an important theme, the interviewer will try and deviate from asking politically motivated questions, and rather focus on the role of the government in such cases. Such context must be taken into consideration in the analysis of the data to determine the long-term effect they can have on collaborative processes as well.

2.1. Case study: city of Groningen

The study focuses on the city of Groningen as a case study. The city is the largest in the Northern side of the Netherlands with approximately 200,000 inhabitants, a large amount of which are university students due to the various education possibilities that exist. This has led to various innovation and research collaborations to occur which has promoted the prioritization of sustainability and innovation (Gemeente Groningen, 2020^a). The municipality revealed in June of 2020 their green plan for the coming ten years called '*Vitamine G*' (Vitamin G in English), a complex overarching project and policy plan to create a greener and more sustainable city that goes together with the growth and chance creation of the city itself. The goal is to help the city grow following the principals of the 'compact city' together with strengthening the nature and sustainability in the city while having the citizens and their health as central importance (Gemeente Groningen, 2020^b). Vitamine G and its projects includes various areas of improvement such as: green streets and networks, reduction of CO₂ emission, green agricultural areas and providing a healthy environment for citizens.

What stands out in policy document of Vitamine G is that most of the projects under this program are dominated by top-down approaches, it mentions collaboration and enabling participation with citizens in different projects but does not provide a distinction as to how it

is done or worked on. The municipality provided open hours for questions and suggestions and looking at these the majority regard the lack of information on what green implementations are going to occur, the importance of preserving already existing nature and enhancing it and the associated costs (Gemeente Groningen, 2020b). Only a small section of the report questions highlights participation issues, mostly questioning the inclusion of international students, non-Dutch speakers, and the experience of exclusion in larger projects in the past. It is important also to question the amount of people that were aware of the project. Therefore, the people asking the questions could mostly represent people that are aware and involved in these changes in the city. As the implementation of the various plans take place in later years it's not the intention to already judge the approach of the municipality as the individual projects will have individual collaboration processes and their own methods of citizen interaction depending on their goals. But it does allow to see that there is less importance given to participation and collaboration when the government on their main report accessible to all citizens. Furthermore, the mention of the bottom-up participative collaborative initiatives exists but is at a very minimum. It confirms that the bottom-up projects ('Groenparticipatieprojecten Groen') are the most valued to the citizens as it creates involvement in the community and allows for engagement in the community, further enhancing the social cohesion (Gemeente Groningen, 2020a). The lack of information further motivates the study to look at this area of interaction and to understand the existing barriers and perceptions that exist. The need for both government and citizens exist to enhance these forms of interaction. Mostly by providing an insight based on current context and societal dynamics and backed by the corresponding theory which allows for updated knowledge and ideas.

To comprehend the barriers in different adaptations the study looks at three different interactions which take place at different levels of involvement from both citizens and the government.

1. *Vitamine G*: The strategic environmental transformation project led and coordinated by the municipality of Groningen attempting to strengthen green infrastructure in the city and its surroundings. The different types of projects included in Vitamin G that are infrastructural changes to a community to enhance the interaction with nature and create more involvement with sustainability. These projects range from creation of parks to the structural change of a street to include green infrastructure. As these projects are taking place between the years 2021 and 2025 the study looks at those that have started and include a collaborative process with the citizens, therefore a degree of participation must be present. The degree of participation is the highest from the three projects, as there is a direct form of constant collaboration between citizens and the municipality. The scope is also large and aims at providing long term solutions to the city.
2. *Eetbaar Groningen gardens*: Project that supports citizens in creating their own community gardens and supports them throughout this process. Furthermore, creating a network of initiatives that help promote healthy eating and community engagement. The idea being that the municipality takes on a supportive role in the creation of these. Therefore, monitoring and helping their growth. These range from street initiatives, neighbourhood gardens to larger non-profit organisations that are supported by the municipality and the province. As the variety in gardens is large, so is the degree in participation of citizens, creating a diverse background and reasoning behind the barriers. This is considered the medium level in adaptations, focusing therefore on

more substantial adjustments but letting the citizens decide how far they want to take it. For example, leaving it as a garden that provides food, or creating a area for community gatherings and involvement.

3. *Operatie Steenbreek*: A straightforward project that is enabled by the municipality in different areas of the Netherlands as well, it allows citizens to change the front tiles of their pavement for a green front. This is promoted by the municipality, and they are responsible for implementing the changes for no cost. The citizens only task is to plant and maintain the garden. This adaptation is of low entry for citizens and therefore has a large degree of participation over the years. It is considered a short-term coping measure, the impact on sustainability won't be large, but are considered steps to increase knowledge and participation on the subject.

Below in *tables 3 and 4* there is an overview of the number of interviews per projects, the gender of the respondents, their role in the projects and the location of the interview or the project they are associated with. These tables are added as well in appendix 3 and serve as a reference for the reader to understand where quotes came from.

Interview overview			
Operatie Steenbreek	Gender	Role	Location
Interview 1	Male	Participant	Nieuwe Kijk in het Jatstraat
Interview 2	Male	Participant	Nieuwe Kijk in het Jatstraat
Interview 3	Female	Participant	Grote Appelstraat
Interview 4	Male	Participant	Leeuwarderstraat
Interview 5	Male	Participant	Leeuwarderstraat
Interview 6	Male	Participant	Middenstraat
Interview 7	Female	Participant	Middenstraat
Interview 8	Female	Participant	Resedastraat
Eetbaar Groningen			
Interview 1	Female	Participant	Hof van Reseda
Interview 2	Male	Participant	Hof van Reseda
Interview 3	Female	Co-creator	Hof van Reseda
Interview 4	Male	Co-creator	Hortus Hof
Interview 5	Female	Participant	Geheime Tuin
Interview 6	Male	Participant	Geheime Tuin
Interview 7	Female	Co-creator	Geheime Tuin
Interview 8	Female	Participant	Hortus Hof
Vitamine G			
Interview 1	Male	Participant	CASMOPOR Park
Interview 2	Male	Participant	CASMOPOR Park
Interview 3	Female	Participant	CASMOPOR Park

Table 3 - Overview of interviews done for this thesis (Author, 2022)

Expert interviews overview		
Interview	Project involved in	Role description
Interview 1	Hof van Reseda	Current user of the garden and in charge of maintaining the garden and other activities that occur. Has been there for around 8 years, witnessed all the changes through time that occur in a community garden.
Interview 2	Geheime Tuin	Co-creator, focused on the social aspects of the community, trying to create cohesion, and learning opportunities to empower those around the project.
Interview 3	Toentje	Creator, has been able to expand the garden successfully creating room for other projects such as a restaurant and other community projects. Toentje is the largest community garden, and it focuses on providing for the food bank.
Interview 4	Eetbaar Groningen, Operatie Steenbreek	Coordinator of green projects in the municipality of Groningen. Oversees all green projects and has a strong understanding of the dynamics necessary to create and manage these successfully.
Interview 5	Eetbaar Groningen, Operatie Steenbreek, Vitamine G	Municipality of Groningen policy officer, was able to provide a context to the role of the municipality in these projects, but most importantly the direction the municipality wants to head in and their future role in participation.

Table 4 - Overview of expert interviews done for this thesis (Author, 2022)

4. Results

For the three cases, the in-depth interviews conducted with citizens and were able to reflect the reasoning behinds citizens participation and the corresponding barriers. The more complex the adaptation was, the more complexity was attached to the barriers identified. The following section looks at the cases, their main barriers and how they affect citizen participation and collaboration in these projects using corresponding quotes of citizen and expert interviews. Cases share similarities in barriers and have overlapping issues, yet how they affect the citizens in the adaptation can be different. First, I will present my findings per each case study, including the participants involved and unique aspects. Subsequently, I will then show barriers to participation the identified for all projects together. I close the section with citizens' perceptions on the role of local government in enabling or disabling participation and adding a new finding in the literature related to the results.

4.1. Case study findings

4.1.1. Operatie Steenbreek

Operatie Steenbreek refers to the initiative of the municipality that aims at changing tiles in front of citizens houses to provide room for a front garden (see *image 1*). As mentioned previously, the project has a small impact on the environment and seen as starting coping adaptations. In the case of Operatie Steenbreek, I conducted 8 interviews with citizens, supported by two expert interviews (*Appendix 3*). The interviews were conducted in a variety of areas in the city of Groningen, there was a large number of similarities found, no matter the location of the interviews.



Image 1 – Picture of a child planning their garden (Steenbreek, 2017).

For Operatie Steenbreek, the majority of interviews decided to participate due to the ease of access to the project and the lack of personal investment needed to participate. There was a low entry level to the project itself, it was fully subsidized, and citizens were not required to invest a lot of their time into it, only in maintaining the garden. I observed that citizens felt very open to the project and did not think quickly about negative aspects associated to it, rather, their reaction was immediately positive. Interviewees calling the adaptations: “easy to do”, “easy step”, “everyone benefits”, “it is free, why not?” this allowed for more participation and easier implementation of the adaptation for the municipality. Resulting in a large input by the municipality and low input from the citizens. As interviewees 1 and 4 recall when talking about this:

“In this project I see little that could go wrong, the only thing I have to do is maintain my garden.” (Interview 1, male)

“For the municipality, they gain a lot, suddenly all streets look greener with little effort from them (daily basis) ... for me as a house owner with a little garden it is also fun to have more space for plants.” (Interview 4, male)

Expert interviewee 4, coordinator of these projects, proudly recalls that compared to other municipalities the success behind them is that; Groningen places the same format garden for everyone with little variation, and fully subsidizes the costs, therefore guaranteeing a certain quality. Meaning that the only input for citizens becomes the maintenance of the garden itself, which therefore allows more people to participate in the adaptation. While in other municipalities, the citizens are allowed, and encouraged to do so, but without support from the municipality, as he mentions when comparing Groningen:

“In one of the city districts in Amsterdam, they say report it, but build it yourself and if you can't get rid of the tile, you can borrow a cargo bike from the municipality and take it to the storage. People who really want that, yes, of course they will. But the average person is the one who thinks if it takes too much effort, then no.” (Expert interview 1, coordinator green adaptations)

Furthermore, the results show a shift in interest regarding the placing of these gardens, as the expert interviews recalls, the initial gardens were placed because people were interested in privacy, less bikes in front of their house, or just because the neighbors did it. Now, people have the knowledge on the impact of biodiversity, and are interested in placing them due to their impact on local green sustainability efforts. This finding is also backed by the results where various interviews say that the reasons for involvement are creating a greener environment in the community. During my field visits, I noticed people enjoyed adding to the green spaces in their street, even feeling motivated to add more, and enjoyed walking in other communities where there were green fronts. It shows that the municipality, by creating an easy access to the adaptation is able to also shift the existing patterns of thought behind it as well. One interview when asked about his reasons for participation states the following:

“I think such projects have a positive effect on the city, people enjoy seeing green streets. I do not know if it will move people to become more sustainably conscious, but then even if you aren't aware of the benefits, it is masked by the aspect of beauty.” (Interview 8, female)

4.1.2. Eetbaar Groningen

Eetbaar Groningen is the community led initiatives that is supported by the municipality in its creation, creating a network of community gardens in the city. Its scope takes place on a medium level and is seen a substantial adjustment regarding possibilities with its implementation. In order to better understand the role of participation in Eetbaar Groningen projects, I conducted 8 interviews in 4 different locations, together with 3 expert interviews from different gardens. The first garden, *Hof van Reseda* is neighbor initiated and managed, subsidized by the municipality and serves the purpose of providing food and a leisure area for them, the majority of the citizens are from a well of socio-economic background and well aware of the possibilities the municipality provides. The second expert interview was at *de Geheime Tuin*, a private garden located in lower income area, it is in the process of obtaining subsidies at the moment of writing, its aim is providing a space for the community to come together and create cohesion and provide an opportunity for all. Lastly, the third expert interview was with *Toentje*, a unique municipality sponsored garden that provides for the food bank, works with volunteers from the city and has expanded by creating a restaurant and

providing space for small initiatives. The garden appears successful at digging its roots in various themes to support the communities around it such as health, food, and citizen empowerment. The responses from citizens were vastly different from *Operatie Steenbreek* due to the adaptations size, citizen variety and governance involvement, these combinations created different results on the extent of citizen participation and the effects of it individually and for the surrounding community. As the individual goals varied, it also allowed for a larger variety in responses, especially as their interest changed through time, for example *interview 4* mentioned that it all started as a food garden, but with time their interest became a meeting place. The complexity of the roles of citizens and the municipality are very present at this level, due to the variety of adaptations and their purpose towards the community, it allowed for the interviews to have a better understanding of existing citizen inequalities in such projects.



Image 2 – Picture of the treehouse built in Hof van Reseda (Author, 2022)

The citizens main reasoning to participate did follow a pattern, they wanted to have a sense of community in the city, all gardens interviewed share that they have been brought closer together, something that some don't expect in normal city interactions, as their view is that participation can be a tedious process. In various cases, it initially starts as a gardening project, but with time it allows for better citizen communication and creates a sense of community allowing for different types of interactions to occur. As some of the Eetbaar projects started around 8 years ago, I heard various stories from citizens that involved children growing up playing together in the garden and now turned into their family garden, *image 2* shows a treehouse built for the children at the garden of *Hof van Reseda*.

During my field visits, I noticed that citizens felt very personal about the garden, considering it part of their homes, seeing it as an amenity rather than an obligation. The community is brought together, citizens mention that they “enjoy making decisions together” and “people appreciate the support system that exists”. Two interviewees recall the following when asked about if they are happy with the results:

“Yes, very happy. She had lived there a while and never expected the community to become so close. At first it was about the green and the food, but it grew into community activities.” (Interview 3, female)

“I like this place a lot, in the summer it becomes a very nice area and the neighbors have become friends which does not happen a lot when you move into a city.” (Interview 2, female)

Others view the opportunity to have a garden as a tool to become more interested in gardening and other sustainable adaptations in the city, most admitting that participating in the gardens has made them change their lifestyle. As mentioned in the interview:

"... I also started buying vegetables from the local farmer, because I thought if I put so much energy in it (the gardening), why would I still buy these products from the supermarket?"
(Expert interview 1, female)

And in other cases, some saw it as an opportunity for a second garden, especially in the city, where private green space can often be scarce. Most interestingly is that some gardens became tools of community and citizen empowerment. One case in particular, a first-generation migrant, mentions the following:

'Coming from another country it can be hard to be part of something, everything is different, but I saw this project as a chance to become part of the community and change the stereotypes' (Interview 7, female)

4.1.3. Vitamine G projects

Lastly, the last adaptation looked as was that of Vitamine G. The number of projects involved is vast (*image 3*), and due to its size is the adaptation with the largest impact on the city. I conducted interviews with a limited number (n=3) of citizens who took part in Vitamine G largely as the projects are in their beginning phases. I was able to talk to some citizens involved in the design of a park in the neighborhood of Paddepoel. Which was a project that formed part of overarching Vitamine G initiative, allowed citizens to collaborate with the municipality and different stakeholders in order to determine its end result (*image 4*). Expert 5 (policy maker for the municipality), and expert 4 (coordinator green adaptations for the municipality) were able to give me further information from the governance aspects of these projects. To compensate with the lack of higher number of respondents, I asked all my participants about their interest in participating in other projects of different scope and level, therefore the barriers to the participation are more established. Those respondents that did participate were satisfied with the process, often mentioning being well informed throughout and feeling part of the discussion. The processes of Vitamine G relate also stronger to the government's role, which is discussed further in section 4.3.

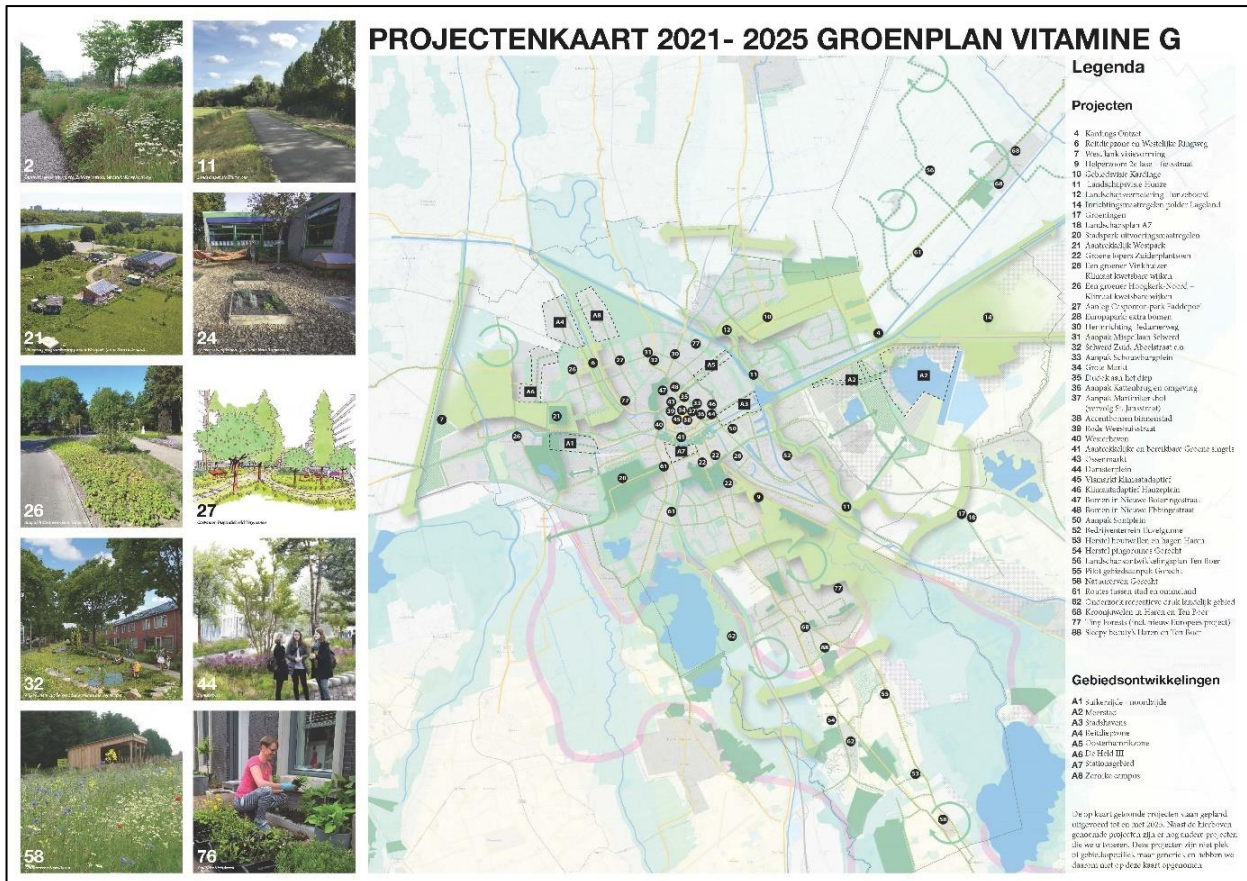


Image 3 – Vitamine G project map from 2021-2025 showing the locations of the projects taking place in the city (“Gemeente Groningen, 2020)

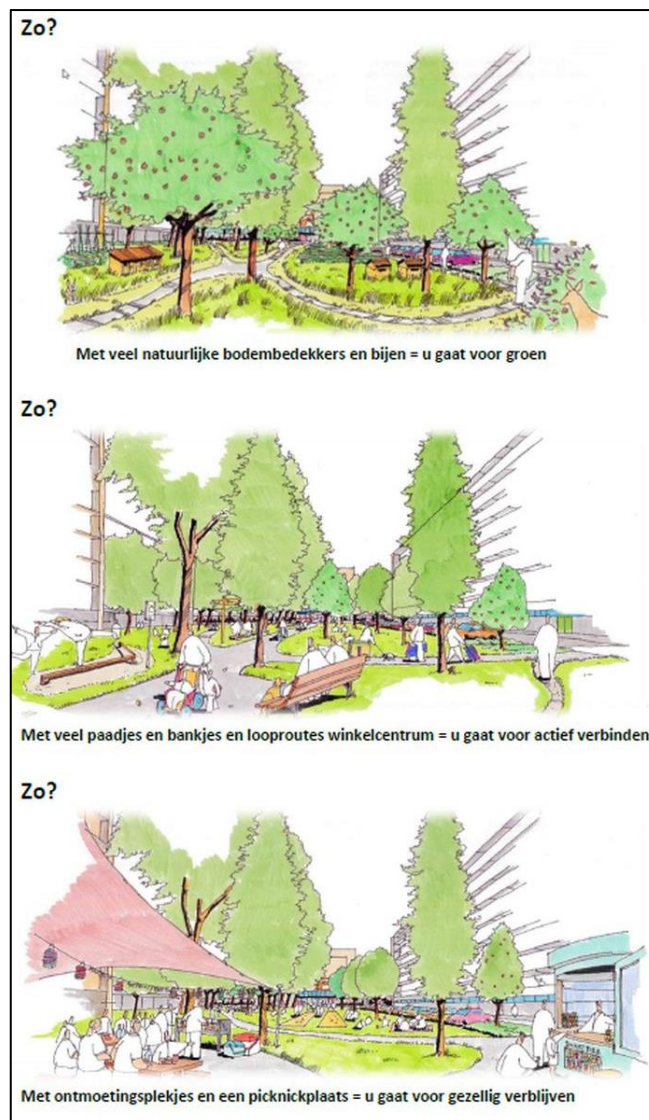


Image 4 – Park in the community of Paddepoel being designed together with the citizens (Paddepoel, 2020).

What stood out as one of the main reasons people participate and collaborate with the municipality is that of privilege, it is seen as an opportunity that not everyone has. I noticed that citizens are aware of the intentions of the government to become more supportive to bottom-up projects, but importantly they know their role attached to the development of the city. Therefore, the citizens understood that it is an option to participate, but more importantly, understanding that participation would bring changes to the community. As one of my interviewees sets it very well, stating:

“Important but also a privilege, not everywhere is it possible. It is the role of the municipality to allow this, but they are not forced to do so.” (Interview 1, male)

The second reason for participation is that of interest to change in the city, citizens that participate are aware of the ongoing projects and want to voice their perspective. Various responses commented that they would not participate unless the project directly affects them and therefore their daily environment. I noticed, that participating in it allows the citizens to learn the municipality’s point of view in a project which is something that they feel is missing. Citizens feel that projects feel sugar coated and lack a ‘realistic’ perspective when

advertised, often feeling as advertisements, and ignoring the reality of a community. One interviewee recalls the following when talking about the importance of participation for both sides:

“Participation is important for both sides, municipality learns citizens perspectives while citizens learn municipalities intentions, and here I can learn more than I would via the news or the websites.” (Interview 3, male)

4.2. Main barriers identified

In the following section, the thesis identifies the six main barriers to participation in the case studies, the barriers are explained and contrasted below. It is important to distinguish that while in some projects one barrier is more visible than another, the barriers can still exist, or be created over time. Each barrier shows the citizen perspective, expert opinion and my own observations across the interviews and data collection. Lastly, the thesis identifies four internal barriers, which mostly relate to the citizens perceptions, and they are able to lower the barriers. The last two are external barriers, meaning that they are in control of the municipality or other stakeholders, they are responsible of eventually limiting the effects of these barriers.

4.2.1. Lack of information

The barrier comes mostly from how information is spread and shared. Various citizens comment that there is a lack of information available for them in how, when, and most importantly why they should participate in different adaptation projects. If this is not available, then citizens will not be able to take the steps required to participate. I noticed throughout the adaptations that the majority of citizens become aware of the possibilities through neighbors, therefore, showing that being in contact in the community remains important to learn about its possibilities.

In the case of *Operatie Steenbreek*, there is a very clear pattern that citizens heard about the adaptation through their neighbor, very few of them heard from the municipality, or read about it anywhere. They were not previously aware of the possibility to participate and were not aware of the steps needed to do so. When the project started, there was a degree of advertising and various campaigns done, but this is no longer the case, the municipality relies now on their online sources or the community to inform new neighbors about these options. One interviewee, shares that she went door to door in their street to inform the neighbors about this new project in which she had participated about. She had seen the project in a news article and from there called the municipality, she feels that:

“Especially in the communities, there are many opportunities to work together and become closer, but no one knows about it, then I can’t blame them” (Interview 8, Operatie Steenbreek, female)

This barrier is especially shared with the *Vitamine G* projects. Many interviewees that did not participate see the entry level to such projects as very high, especially as information is not often distributed properly and via multiple sources, in the perspective of citizens. Various interviews state that they are not aware of any possibilities, or more interestingly, that they misunderstand the goals of the adaptation, meaning that they were not aware of its effects on sustainable development for example. Therefore, citizens feel there is a lack of transparency

in the effects of a project, not in a sense they are misled, but they miss out on opportunities attached to the projects. One interviewee stated the following when asked on the difficulty to join the project:

"Hard to join, because not everyone is aware how to and the importance of it in the long term... projects have the stereotype of only being "green" and people do not know it also has an impact on the community or social cohesion." (Interview 2, Vitamine G, male)

Furthermore, the citizens feel that the information provided is not always clear as to what their role is in the outcome of the projects, it can be disturbed through long time period of waiting between meetings. I see that citizens are motivated for the initial participation process, but once an initial meeting occurs people feel that their task is done of collaborating, largely as there is no information given on what is expected from them. This goes hand in hand again with the that the lack of transparency regarding how the results are affected by citizens, which does not motivate people to participate. In one interview, the citizen stated the following when we were talking larger projects in the city, wishing he knew more of what participation added to the project:

"You hear about the participative process in projects, but I never know where to find what these citizens did, and if it really changed anything..." (Interviewee _, male)

For the gardens of *Eetbaar Groningen*, a similarity is seen with the passing of information through neighbors, but there is not a feeling that there is lack of information on the availability of the adaptation. As the adaptation takes place in a scope where citizens are in charge, they are also responsible for spreading information and engaging with local authorities. The municipality supports them if they need to, for example by writing a letter with them to inform citizens (example seen in *appendix 4*) but will not take on responsibility of finding participants. Therefore, as it is more of a bottom-up approach, the spread of information lies in the hands of citizens and in many cases, there is an individual that is able to lead the community in the right direction, this is elaborated further in the next barrier. Most importantly, the barrier shows that the lack of information occurs mostly in the processes where the municipality takes the lead, as they have to find a way to motivate citizens to participate.

4.2.2. Lack of knowledge

This barrier is the case that citizens do not have the knowledge to be able to participate in an adaptation, referring to them personally not knowing certain aspects they feel are required. Or in some cases, having the wrong perception or opinion associated to its purpose and goal, which leads to a defensive approach to the project. For example, it can take a citizen more time to understand what the participation is asking of them, therefore taking a longer time to initiate the process, or avoiding the adaptation completely as citizens can feel unprepared. The barrier is seen across all case studies varying on the different degrees of knowledge associated to participate.

In the case of *Operatie Steenbreek* citizens required little knowledge to participate, as they only need to know how to plant in the garden and how to maintain it. As the garden is in front of their homes, and they are made by the municipality at no cost, citizens feel like it is a good trade off, and seem to be more open to learn to garden for a 'free' addition to their home. In the case of *Eetbaar Groningen*, similarly, due to *lack of information*, citizens feel that they

have never had the opportunity to learn the needed skills to be able to engage better in participation or be able to use the resources available for their benefit, for example get subsidies or unite the community in support as they have knowledge on the benefits of a project. There is a clear pattern that those who initiated the process of creating the adaptation were aware of the possibilities the municipality offered and had the knowledge and skills to further engage and see through to the end of the project. As one interviewee mentioned for Hof of Reseda, the garden created by a group of neighbors:

“Henk Jan, our neighbor that initiated it all, but doesn’t live here anymore. He had a lot of passion for it, he was very involved with green gardens, he was a biology teacher. He was able to think about this project and notice the possibility we have. Together with another lady that was very interested in gardening and knew a lot about it...” (Expert interview 1, female, coordinator of Hof van Reseda, Appendix)

What occurred in Hof van Reseda matches with the municipalities point of view, where they will support those that initiate the projects themselves, as for the municipality it is hard to push people to do so. I noticed that citizens feel they do not have the needed knowledge to engage in community discussions and convince other citizens. This knowledge also extends to more practical things of course, the limit in knowledge can be as simple as how to maintain a garden. Another interviewee mentioned the following when asked on starting the initiative himself:

“I don’t think I would have started the project; I don’t feel people would listen to me because back then I knew nothing about these gardens.” (Interviewee 2, male)

In the case of *Vitamine G* projects, the lack of knowledge seems to be the most prevalent barrier for citizens regarding participation in collaboration with the municipality. The citizens feel that they are not prepared to engage with other stakeholders and share their perspective. Interviewees share the feeling that they lack general knowledge about sustainability, therefore lacking trust in themselves to give their opinion in the meetings. Meaning that citizens feel that they are not able to share their unique opinions and perspectives, which can be a big limit to a project. Even in situations where the municipality is open to share as much information as possible, it can lead to situations where citizens have to process and respond in little periods of time, therefore lacking the knowledge how to navigate the bureaucracy associated. One citizen shared with me the following, he agreed about the efficiency of the process, but as others agreed, it is a lot of new information for him:

“The process felt very open, all questions were answered without hiding details... the issue was that you have to know what to do with this information in a short period of time.” (Interviewee 1, male, Vitamine G)

4.2.3. Time as a barrier

The barrier of time is mainly the idea that citizens do not have the amount of time required to participate in a project, therefore are not able to, or choose to spend their time elsewhere. The barrier can also be seen as a result of inequality, as for many citizens, this time has to be spent working or taking care of family members, while others may have the privilege to not have these issues and therefore invest time in the adaptation project.

In *Operatie Steenbreek*, even though the adaptation projects did not take any time from the citizens, expect as some call it ‘one phone call’ or ‘just an email’. It does show that its success is based on the ease of access. Various citizens state they would not do this themselves because they do not have the time to do so. There is definite trend in all interviews across all projects that there is a need to invest time in an adaptation, and if the time needed is too much, people will see that as a barrier. As one interviewee mentions when talking about the needed input of citizens:

“Without this project, I do not think people would have done it by themselves... it costs money and time, maybe people in the street would even complain because it takes space and it’s not supported by the municipality.” (Interviewee 5, male, Operatie Steenbreek)

Similarly, when it comes to participation in higher levels such as those in *Vitamine G*, the majority of respondents shared the opinion that participating at such a level would not be something they are interested in, mostly due to the time commitment associated to these collaboration processes which are hard to balance in citizens’ lives. I noticed there is a clear stereotype associated with the ‘slow’ and time-consuming processes of collaborations with the municipality. For instance, one interviewee makes this point clear when asked if they would participate in larger projects:

“Yes, for sure, I would like to get involved in as many projects as possible with the time I have, it can be hard to participate sometimes, because if you don’t have the time, there is nothing you can do about it” (Interviewee 3, male, Operatie Steenbreek)

Similarly, in the case of *Eetbaar Groningen*, to be able to participate in the adaptation of creating gardens, time is a big barrier to participation. The gardening aspect itself requires an investment of time itself, but additionally gathering the citizens, making the plans, and executing them can require a large period of time. Furthermore, if the support of the municipality is needed, it will take additional time from both sides, further increasing the scale of the barrier. Time is a resource not everyone has and therefore it could pose limitations in community involvement where eventually conflicts could arise if citizens decided not to participate. Rather, it stood out that citizens are not bothered by others not participating, there is a general understanding that ‘everyone has their own choice’. But, as interviewee puts it below, it can create alienation.

“... we are city citizens and not people from a village (referring to who has to participate). Everyone was very motivated and excited, except one family that never came to the meetings, but that is fine as well, but I did not get to know them at all in the years they lived here.” (Expert interview 1, female, coordinator of Hof van Reseda)

4.2.4. Economic background

In some cases, a citizens own economic input is required to participate in a project. For example, to maintain their garden, or as mentioned in the previous time, their time is best spent earning money. Therefore, the citizens economic background becomes a barrier to participate. This barrier is also seen in the support from the municipality itself, for example by not subsidizing certain projects the correct way, or spreading the budget equally, such approaches can create inequality barriers that limit the access or use towards the adaptations properly.

As discussed in the previous barriers, *Operatie Steenbreek* has the unique aspect that it is fully subsidized by the municipality, the only cost being paying for the resources needed to maintain and create the garden, a relatively low cost. This was not mentioned as a barrier by anyone in the interviews, funnily, the expert interview 4 said that only a handful of people decide to take away their garden each year, and mostly because they are too “lazy” to maintain their garden. In *Eetbaar Groningen* citizens are also supposed to add their own resources to the garden, but on a larger scale and more efficiently. As the plants will become food for them and their neighbors, the quality of the garden is also important. A lot of citizens mention the unique opportunity to have home grown food and how much it adds to their life, yet this economic investment can also be a barrier for others.

Very importantly for the gardens and their start is the support and subsidization by the municipality, especially the initial process of landscaping, boxes for crops, greenhouses, etc. But, in the long-term citizens are expected to come by their own seeds, fertilizer, or any other resource attached to taking care of their community garden. Such an investment can lead some citizen opting not to participate as they do not want to invest into the project or have no resources to do so. The barrier relates closely to *lack of time* as a barrier, as for many people they cannot afford to spend time on a garden and see it as a luxurious amenity. For example, economically, in *Hof Van Reseda*, where the project is used by a group of house owners that share a stretch of land behind their property, these citizens comment that the project was easy to implement as more people had the time and economic resources to invest in their piece of the garden, therefore the project was seen as an added amenity to their existing living situation. The subsidies given to them by municipality were used to expand their influence on the neighborhood, as mentioned in one of the interviews:

“... with the subsidies we were able to do other things, like asking for help with a greenhouse for our garden. Which we were able to do with the subsidy, we all found this very luxurious and felt like it was excessive. Because, well, it is not like this area has its economic issues, or that this neighborhood is characterized by economic inequality. But okay, you do get a lot of money which can be used, and we were able to then do projects with the school across the road for example.” (Expert interview 1, female, coordinator of Hof van Reseda)

While in contrast to the mentioned point of view, in the case of *Geheime Tuin*, a private initiative by citizens to support the local community, as they pay for everything from donations or by themselves. The need for subsidies would define their strategy for long term success. Without it, they would need a profit plan, and with a subsidy they could rather focus on the benefits they can bring to the community itself. These results show a further gap in government awareness regarding the capacity of individuals to navigate the bureaucracy and information attached to benefiting from these projects. The need for subsidies can also lead to certain criteria needing to be met, which can deviate from the original purpose of the project and create unnecessary tension. As mentioned by the organizer below when talking about the benefits of getting a subsidy.

“Well for me it is a very peaceful idea if we get it, because I always have to think about a underlying agenda here, and I don’t want to think about that, all these models to make a profit as an organization... We have those in the neighborhood, I know how that goes, it doesn’t provide an opportunity for everyone.” (Expert interview 2, female, co-owner of Geheime Tuin)

4.2.5. Property ownership

For many projects, access to land is essential, and more specifically the ownership of it. This can be as simple as not having a garden, therefore needing a community garden, or as complicated as needing the space for the garden itself. It becomes more complicated when the municipality and other stakeholders have determined all land uses in the city, therefore, unless one owns property, changing the initial land use can be difficult. Especially as the interest in land can come from other departments within the municipality, therefore also creating internal competition. Furthermore, having control of the land does not guarantee that with time the municipality will have to change the land use again, causing projects to have uncertain futures and not being able to create long term plans. This is one of the two external barriers that is identified in the thesis that citizens face in the three different adaptations looked at, therefore, the government is largely responsible in limiting the barrier, as they have the most power to apply incremental changes here in.

In *Operatie Steenbreek*, the interviews identify property ownership as a barrier for others to participate, they see property ownership as a necessity to participate. Here they refer to a citizen does not have ownership over the house, they will not be invested in the long term (e.g., students), or ultimately have no space to do so (second floor, no space, pavement too short). These barriers limit the participation and require a different approach by the municipality to create more inclusion to adaptation projects. Interviews _ and _ show contrasting thoughts regarding the citizens that do not participate, and show the dichotomy of adaptation projects, not everyone can participate equally, but by having positive effects on the city's environment, citizens are able to have secondary benefits.

“You know, I think this is a project where the whole city wins... everyone is able to participate and those that can't still benefit from the green on the streets when they walk along them.” (Interviewee 7, male, Operatie Steenbreek)

“Not everyone can do it, why would a student do it in front of their house if they move every 2 years? Or if I live 3 stories high, it would be nice to have subsidies for green adaptations as well.” (Interviewee 6, male, Operatie Steenbreek)

Land is an important aspect *Eetbaar Groningen* as space is required for community gardens. Sometimes, it can be as easy as in *Hof of Reseda*, where behind their houses there was a large area of shrubbery that divided the space to a drainage ditch. It was owned by the municipality, and therefore the process of transforming the terrain was quick and with little barriers. Especially, the access was very easy, it was right behind their house, almost an extended garden. Expert interview 4, coordinator of the adaptation mentions that in the block next door, it does not have the same space behind them, therefore they build across the street, this choice caused much less interest by citizens and led to the eventual closer of the garden. For citizen initiatives this means that obtaining permission, or the correct piece of land can be hard. Furthermore, if the municipality or cooperation does give permission, it can often be temporary while a purpose or investor is found for that area, therefore not guaranteeing long term existence to these adaptations. A good example of this is Toentje, which had to switch locations as the housing cooperation decided the market was good enough to start building again. This change caused the project to have to reset and loose various participants as this location brought other challenges, as expert interviewee 3 explains:

“And then we moved the entire garden to Pioenpark behind our restaurant. The current location is that. We basically did the same as the first location with the idea of inviting the citizens again to visit. And then only eight residents or so showed up instead of the forty like last time which was a huge set back... We later found out that this was because the citizens thought they would receive a playground in that space, something that the municipality never communicated...” (Expert interview 3, creator and manager of Toentje)

4.2.6. Municipal governance

The last barrier I have identified is the one on municipal governance. With this barrier, the findings from my interviews mostly refer to issues in the governance and their internal structures themselves. The issues in governance structures are a study in itself, but the thesis identifies mostly the issues with subsidies and the internal communication with departments which creates overlapping goals but not shared responsibilities. This is the second external barrier that is identified, citizens are not able to do something about it themselves, unless their vote influences those in charge, rather relying on the municipality to change aspects over time. In the case of *Operatie Steenbreek* and the projects in *Vitamine G*, the barrier was not mentioned by the citizens as much, mostly as their interaction with the municipality and their stakeholders came from their side (top-down), therefore, the issues in governance are less visible for citizens. Rather citizens are more aware of the *lack of information or knowledge* which can also be associated to the municipal governance itself.

Where the barrier becomes most evident is in *Eetbaar Groningen*, again as it is a bottom-up approach, the interaction with the municipality from another direction causes friction. Firstly, is the management of internal interests. The municipality works through different groups, each managing different subjects, for example energy and green space, the variety in groups can create conflict when both need the same area for a project to be developed or compete through internal politics to get more resources each fiscal year. When talking to expert interview 4 he mentions the struggles he has seen while working in the municipality, importantly showing they work for similar purposes:

“Everyone wants participation, in the beginning also with the gardens, everyone is interested in them. And then I also visited a few more people from the social domain and say yes, you also get that connection in the neighborhood through a vegetable garden we find them very important, we should do more. But they don’t want to use their own resources, but they benefit if I use my resources, you know what I mean?” (Expert interview 4, male, coordinator of green projects for the municipality)

This is further confirmed by expert interview 5 as well when asked if she is happy with the transition of the municipality:

“... everyone is busy, and everyone is here for their own agenda and their own projects. And yes, the word collaborative/integrative working is nice, but it does not happen often, it is still a bottleneck.” (Expert interview 5, female, policy worker at the municipality)

Such an approach can create lack of communication internally, but this extends also externally to the stakeholders the municipality works with. I found throughout the interviews that stakeholders were often working on the same subject with overlap but are not aware of it happening. The consequence being that by not knowing of each other’s goals, there are missed chances in sharing citizens between each other that could benefit from other types of

projects. Expert interviewee 3 gives a good example of how simple the lack of collaboration can be:

“We are also planning to give cooking lessons to the school children to extend their curriculum. We found out that the neighborhood teams were doing that, and they did not even know from each other. So, we thought good, let’s get together!” (Expert interview 3, Jos Meijer, creator, and manager of Toentje)

Lastly, there is the mention of existing structures in the governance system which can limit the existence of projects. As was mentioned in *economic background*, some projects depend on subsidies to exist, and the process of obtaining one can limit their expansion. In the case of *Toentje* it provides another example of the complications in subsidies. They get subsidies once a year from the government for the project, and each year they had to re-apply according to the regulations set by the government. Yet, their success is well recorded, and their impact is well supported by the municipality. Constantly having to re-apply meant that there was a lack of longevity for the creators. Toentje was able to change this to a four-year period, with the argument that it provided them longevity and could focus on longer term projects. This example shows the issue that exists with pre-determined ‘copy-paste’ regulations that are not yet tailored to the existence of bottom-up or co-created projects, they do require unique exemptions that do not yet exist to provide long term benefits. To conclude, *Table 5* summarizes all six types of barriers identified across three case studies covered in this research.

<i>Data Operatie Steenbeek</i>				
Population	Citizen impact	Government involvement	Reasons for participation	Barriers to participation
8 interviews, 2 expert interviews	Low entry level to participate, low community impact, very high amount of participation.	Government builds the spaces and promotes the project, fully subsidized.	Easy access to project, social interaction, increasing sustainability, low time investment.	Lack of information, lack of knowledge, lack of time, property ownership.
<i>Data Eetbaar Groningen</i>				
Population	Citizen impact	Government involvement	Reasons for participation	Barriers to participation
8 interviews, three expert interviews	Medium entry level to participate, large community impact, high amount of participation	Municipality provides subsidies for community created initiatives; Provide resources, knowledge and network. Other projects created by citizens without subsidies.	Community building, social interaction, interest in sustainability, citizen empowerment.	Lack of time, lack of information, economic background, property ownership, municipal governance
<i>Data Vitamine G</i>				
Population	Citizen impact	Government involvement	Reasons for participation	Barriers to participation
3 interviews, 2 expert interviews	High entry level to participate, medium community impact, low amount of participation	Municipality owns and creates the projects, seeks to collaborate with citizens input.	Interest in sustainability, community building and citizen empowerment.	Lack of time, lack of information, lack of knowledge, lack of interest.

Table 5 - Overview of data results for the three projects looked at in the thesis (Author, 2022).

4.3. Role of the government and citizens

To better understand the impact of barriers to participation on citizens, my interviews included questions on what the role of individuals and that of the government should be in the three adaptations looked at. These roles have an important impact on who is responsible for the barriers and the perception towards them and gives more clarity to these. The arguments

are supported by citizen and expert interviews, in many cases continuing aspects explored in the barriers identified in the previous section (4.2.).

On the one hand, the interviews with citizens showed that citizens were mostly in agreement to what the government should do regarding sustainable adaptations. Locally, they should support community initiatives and create stronger networks. While nationally they should aim at *'sponsoring constant innovation'* and be responsible for having sustainability as a goal across all aspects of governance and remaining clear about it as one interview clearly states:

"Just saying we will be CO2 neutral by x year is very vague, it makes me think it is not really possible, we need concrete steps." (Interview 5, male, Operatie Steenbreek)

The citizens comment that the municipality should be responsible of bringing big changes to the city, that the citizens themselves often do not have the knowledge for to do it themselves. Various interviews state the importance of using the knowledge that the municipality has for the community projects as well. Especially using the network of stakeholders to create support systems, one interview put it best by saying:

"The municipalities in the Netherlands have so many stakeholders, they should be more aware of all the knowledge they have under them about the communities they work under." (Interviewee 4, female, Eetbaar Groningen)

The role that citizens put on themselves in sustainable adaptations is divided into two main ideas. Firstly, 'we choose the government, and they are responsible for bringing us adaptations', therefore, the citizens right of choosing, and knowing who to choose is valuable. Secondly, there is an agreement that citizens should become more aware of the importance of sustainable adaptations, especially in their community surroundings as they have expert knowledge. By doing so they are able to add more to their community and be able to vote in a more informed fashion. The following quotes state it best when asked about their role as citizens:

"To be able to understand what is going on in the world regarding sustainable development and be able to apply it to your own life" (Interview 2, male, Operatie Steenbreek)

"Citizens need to be active in the city regarding the changes, because they are those most aware to their surrounding changing... an approach in Leeuwarden can have different effects here." (Interview 7, female, Operatie Steenbreek)

The municipality experts interviewed in the study, shared similar thoughts on their role. They agree that their role in the community is to be supportive of bottom-up ideas, as expert interview 5 calls it, *'always have to look at what people need... that has to be our starting point'*. But as mentioned in the barrier of *municipality governance* such an approach can be hard due to internal affairs. These barriers internally are also expressed in the lack of resources to monitor and connect projects, especially as there is only one person responsible for all the projects. Yet, they remain positive that the transition is going in the correct direction, albeit slow. There is an agreement that the role of the municipality is changing, but they have to transition slowly, as mentioned in the one of the interviews:

“... we want to put the citizens to work with their ideas, but we can't immediately give them large problems. They have to be able to process it. People want to see results of this process first and benefit from it.” (Expert interview 5, female, policy worker at the municipality)

Further, the municipality's role has to be 'precise', especially in neighborhoods, where one approach cannot be the same everywhere. 'The municipality's role is being supportive, we can't solve it for people, but we can set a structure to help them' was the response to the feeling of people lacking information. Further, there is mention that citizens can always be welcome in their neighborhood teams and that they are currently combining various separate websites to create one for sustainability advances and tips for citizens, in an attempt to make all information central. There is a clear attempt from the municipality and its stakeholders to create changes and be part of the transition, yet the transition is clearly slow and there is a disparity in the view of citizens and what they ask from the government and the effort that is put in by the government itself. This is further looked at in the section below, here the thesis dives deeper into discussing the results.

5. Discussion

In the following section, the thesis will take the results and place them into the ongoing literature looked at previously. Thereby aiming at answering the research question and secondary questions. I start by looking at how barriers limit participation and collaboration, afterwards examining the role inequality has in Groningen. Thereafter, the role of the municipality in limiting these barriers is looked at. To finalize, the thesis examines the role the theory of commons has on the themes found in our thesis, and how this plays a large role for future projects.

5.1. How are barriers limiting participation and collaboration?

As shown in the results section, the thesis identifies six barriers that are limiting collaboration to various extents. There is a clear distinction in where barriers come from, either the citizens background or the governance associated with the projects themselves. Firstly, these barriers to participation are obstacles, therefore there are solutions to overcoming them through the correct increases in political resources invested, changes in thinking and prioritization in resources (Moser & Ekstrom, 2010). The thesis does not find any barrier where any of these solutions will not help citizens overcome the barrier. This does not mean all results will be positive, still adaptations can fail due to externalities, or a combination of barriers, yet there must be an increase in the current practices in participation to set a form of best practice. Furthermore, the thesis finds that even though adaptations taking place in the mid-level of Moser & Ekstrom (2010) study (*figure 1*) have the most barriers, the positive effects they have on the citizens and the motivation behind their actions is the largest, compared to the other two projects.

The study by Wamsler et al. (2014) mentions that the most common barriers for public engagement in sustainable development come from the governance associated to them and it is also evident for the city of Groningen. The study also overlaps with the findings by Mees et al. (2019) that identified three issues with municipalities and participation. Firstly, the lack of flexibility the municipality is able to give to citizens. This is visible in the case studies as well and becomes clear with barriers such as *property ownership*. The municipality lacks the internal capacity to offer flexibility to projects to develop their own character, or in the case they do provide the flexibility, it can take a large amount of time. The effectiveness of

Operatie Steenbreek in having large amounts of participation was due to the lack of flexibility there is in the project, it was a straightforward project with little barriers to participate from the governance side due to this. As soon as projects become more complicated and include a variety of citizens such as the gardens in *Eetbaar Groningen*, the amount and complexity of barriers increases highlighting the current lack of flexibility that the municipality has to offer. It has to be mentioned that in an urban context, the themes the local authorities have to comprehend become increasingly complex and interlinked, which limits the ability of the municipality to act in a copy-paste manner with projects, and tailoring projects to the context takes more time (Broto, 2017).

The second finding by Mees et al. (2019) was the uncertainty associated to citizen initiatives and their long-term effects on citizen participation. The uncertainty was prevalent in the responses of citizens found in the thesis. With initiatives controlled by the municipality, there are less uncertainties on their longevity, the uncertainties rather lie in the actual role associated to citizens. With a low entry level adaptation like *Operatie Steenbreek*, citizens feel assured it will be fine as their own input is low and the project has immediate impact. Ultimately, their role is simply participating, without many complications. But uncertainties rise the more is expected from citizens and the bigger impact projects have, this is especially seen with the project associated to *Vitamine G*, and the comments citizens gave at participating at such a level. There is a distrust in the citizens own abilities, and a distrust in the lack of information the government is giving citizens, which causes a perception that there is a lack of transparency in goals and results of projects according to citizens. In my perception, there are no negative intentions from the municipality, rather a lack of awareness the effects of their information sources have on citizens and how to correctly inform different citizens. The issue therefore becoming inadequate information and the lack of monitoring of its effects (Ghorbani et al., 2020). Furthermore, the lack of long-term participation I see is worrying, projects like *Toentje* and *Geheime Tuin*, which show a commitment to the community and a larger variety of themes seem to have long-term goals, together with the possibility of subsidies from the municipality, they will be able to reach these goals. Therefore, the variety in goals allows for increased impact on the community and therefore more motivation to participate in the variety of projects (Emerson & Nabatchi, 2015). But, to contrast, I noticed that for example *Hof van Reseda*, which was created eight years ago is now slowly declining as citizens are less eager to participate, their children grew up, neighbors moved out, etc. They agree that they would benefit from a bigger network of projects and other adaptations to share ideas and continue the motivation (El Asmar et al. 2012). As the current coordinator for the green adaptations works alone, it is possible to say that this limits the possibilities for the projects to develop further, rather the focus seems on creating momentary participation and hoping citizens carry the momentum. Such an approach works with *Operatie Steenbreek*, which has a steady increase in users, but with more complex issues with larger responsibilities amongst stakeholders, there must be an increase in input from the municipality (Hugel & Davies, 2020). Such an input will allow for the decrease of existing barriers for its participation, but also in an adaptations long term effect, as more citizens are able to overcome the barriers, it will bring renewal and new forms of creativity through their expertise (Turner et al., 2008).

The last finding by Mees et al. (2019) identifies the possible increase in citizen inequality that can occur when some initiatives are supported while other are not. Monitoring inequality can be resource consuming for local authorities, especially as it is based on citizens perceptions (Ghorbani et al., 2020). Yet, this thesis does observe a possibility for inequality to rise from the intentions behind a greener city, especially in the role citizens can have in participating.

The three adaptations looked at do not speak for all projects in the city, and it is important to acknowledge the large variety of projects both from bottom-up and top-down that could have less inequality barriers. The importance of inequality as a theme in barriers is discussed in the following section.

5.2. The role of inequality in the found barriers

As mentioned above, the thesis identifies that there are various inequalities attached to the found barriers. These inequalities are important to address not only to decrease the ability to overcome the barriers by everyone, which is step one. But also, in a situation where not all citizens are able to participate it will create 'us' against 'them' scenarios which will limit current and future adaptations in an area, while also increasing negative views to the municipality's capacity (Axon, 2020). But this highlights a paradox found in the thesis, participation happens in places that want to do so, or are forced to do so due to external causes (such as climate emergencies), but by the municipality unintentionally creating barriers that include inequality it will push to less participation, even if the initial reaction is positive amongst citizens (Sprain, 2017). Such a paradox is seen for example in *Eetbaar Groningen*, the municipality offers support and lets citizens lead the project, offering them freedom here in. Yet, the complexities attached in social interactions, variety in economic backgrounds and external barriers will create difficult choices for citizens in order for them to participate.

The thesis found that the barriers to inequality mostly came from inside society, therefore they are created through overlapping contextual factors like social class, culture, and education (Nielsen & Reenberg, 2010; Broto, 2017). The biggest barrier to overcome in participation seems to be time, and therefore, the uneven distribution of time amongst citizens themselves. Citizens with a strong socio-economic background and are willing to invest time in an adaptation have more freedom to do so, as their participation will not limit their daily life. But citizens with a low socio-economic background are forced to make choices when it comes to participation, and often choose not to participate and trusting the choices of those who can regarding participation. Therefore, when organizations are created and citizens that are able to join do so, it can create issues and alienation as certain groups do not feel represented in the end results of the adaptations (Khatibi et al., 2021).

Furthermore, the barriers regarding lack of information and knowledge also shows forms of inequality, mostly in how citizens are able to engage with the given information and then how they are able to use this knowledge to act in participation situations. The choice of participation must remain an option for citizens, but the option becomes blurry for individuals if the information given is hard to obtain or to interpret (Bulkeley et al., 2013). The municipality of Groningen therefore plays a big role in diminishing these barriers to allow for a variety in sources to inform citizens. The reliance on specific information brings back the idea of power in participation, and the inequalities in these barriers create unequal distribution of power, leading to other voices being heard more while silencing, unintentionally, citizens that are affected by the adaptations (Hügel & Davies, 2020). Lastly, the thesis identifies the good intentions of the municipality and its local authorities, even though the intention was not to analyze their internal structure and governance problems, rather focus on the effects on citizens, the importance of the municipality to diminish barriers looks like it is increasing, this is discussed in the section below.

5.3. The role of the municipality and the citizens

The literature continuously states the importance of managing the transitions that are currently finding place in governance and in sustainability, therefore the conscious effort to guide it through the multiple paths (Meadowcroft, 2009). Therefore, the influence the municipality has on the citizens of Groningen relies on constant changes to their relationship with what they consider their daily lives and their surrounding systems (Newig et al., 2018). The thesis identifies that not only the external barriers of *property ownership* and *municipal governance* are caused by the municipality, but rather, all barriers can be influenced by changes brought forward from municipality resources and abilities. The discussion here identifies where the current shortcomings mostly come from and to what extent the municipality plays a role in overcoming them. Then, the role of citizens in overcoming these barriers is also put into question.

Primarily, the lack of information and transparency creates a difficult barrier to overcome for citizens, various citizens struggled with finding the appropriate ways to inform themselves and therefore relied on neighbors to help them achieve participation. By focusing on more effective ways of spreading information and exposure to the themes associated to the adaptations, the response of citizens will likely be more positive as they will ultimately have the tools needed to give appropriate responses (Geiger et al., 2017). The expert interviews with the municipality do mention that they are focusing on creating new websites and ways of communicating sustainability tips to citizens, but I question if this is enough. The findings show that motivation is required in order to move citizens to participate, therefore re-negotiating and changing former ways of information networks to create new opportunities might be more effective to reach the citizens that have yet to participate (Brink & Wamsler, 2018). Citizens respond well to low entry level projects as a first contact with sustainability adaptations as their cost to participate is low, increasing these types of projects and eliminating smaller barriers such as *property ownership* and *economic background* will allow citizens to be better prepared in choosing their following adaptation decision. The results show that citizens need support to create this first step, either from citizens or from the municipality, once the motivation is set, they are open to undertake processes themselves or with the community. Therefore, priorities must be set in being less focused on democratic processes of motivation such as for example: letters, meetings, or conferences. As citizens are more attracted to visual changes that they are able to enter with a low entry point. *Operatie Steenbreek* is a successful example of such an approach, where the barriers lie mostly in lack of information and property to participate. Citizens that did participate were motivated to do more for the urban green around them, even if it meant to vote differently and support organizations that do so.

The other role of the municipality, or government in general that is identified is the lack of internal collaboration that is currently supporting certain barriers. This is part of the transition in governance methods, as the current Dutch government changes their role in society (Mees et al., 2020). Yet it remains important that there is room left to experiment with different approaches to participation (Young, 2011). This is limited when there is a lack of collaboration with the different departments, expert interviews showed that this created unnecessary competition and the lack of resource sharing. Ultimately, affecting citizens as they are affected by the lack of network availability and therefore opportunities. The idea internally is that through time and more practice the transition will smooth out such barriers, but in my perspective, citizens are not aware of this and rather see the lack of communication as common occurrence, therefore it is a good approach for the local authorities to check their influence on the citizens as well.

The role of citizens also becomes evident through the results of the thesis, citizens are aware of the importance of sustainable development in the city of Groningen. But they lack awareness in how to participate. The results show that the barriers affecting participation limited the exposure to the theme of collaboration in sustainability, therefore the citizens needed more time to become aware of the possibilities (Geiger et al., 2017). Citizens interviewed agree that the government is the one responsible of informing them about possibilities, and therefore hold them accountable for the lack of possible participation that exists. Furthermore, there is little feeling of frustration between citizens if their decision is not to participate. Yet, there is increasing frustration that the distribution of power and subsidies can be unfair, this does create a tension the current governance structure, but not with other citizens. There is definite room for growth regarding citizens power in decision making in future participation processes in the city. Citizens are increasingly more interested in further adaptations and with proper information and knowledge will be able to overcome set barriers with more ease. Yet, the responsibility of lowering barriers to inequality lies in the hands of the government as they have the resources and options to support adaptations to lower the entry requirements and level the 'playing field'.

5.4. The importance of commons

In the beginning of the thesis, the scope and scale of adaptation to climate change is discussed (*figure 1*), going from short term measures to an eventual system transformation through increased adjustments. As mentioned in the methodology, each of these cases are on a different level of governance and citizen interaction. In the process of the barrier identification and the interaction with the citizens at each of these projects, one aspect clearly stood out, Eetbaar Groningen had a large and positive impact on the citizens that participated. Furthermore, its impact was more than just food, the projects reached multiple layers of society and interacted with various themes such as health, community empowerment and a sustainable city. The project of Operatie Steenbreek impact was focused on a top-down approach and there was no social interaction, while Vitamine G's projects lack the ownership attached to the project.

Understanding the importance of the middle level made me look back into the literature to identify its importance to a sustainable urban city. This led to the concept of communing. More specifically the importance of managing the common resources in the urban area to increase its impact on social and environmental interactions. When talking about community climate commons, they represent commons where communities can come together to co-create and participate in adaptations that impact the sustainability, in this case of the city (Colding et al., 2021). Most importantly, these commons provide a unique opportunity to empower groups allowing citizens to have more influence on their surroundings, but most importantly a sense of ownership over the city (Colding et al., 2021; Tomas & Lopez, 2021). The sense of ownership creates room for citizens to further explore other opportunities in the city and develop their different knowledge dimensions, benefiting the long-term sustainability of the city (Wamsler et al., 2019). Commoning allows for citizens to create their own space for social networking, discussion and cultural exchange which then creates a larger social movement (Tomas & Lopez, 2021). The impact of communing was especially visible in projects such as Toentje and Geheime Tuin, where the projects had a deeper impact on the community, and the community itself felt that they were a sense of ownership.

With community climate commons, it is about the shared resources between citizens that can be used to reach sustainable adaptations. A crucial resource identified in the literature is that of land, and the ownership of it (Ozkan & Buyuksarac, 2020). Having a common property is important for citizen initiatives to grow and their community to learn of the existing opportunities. Yet, as is seen in the thesis, through the market society, property has also become a luxury that rather creates exclusion for some citizens to be able to participate. Therefore, the identification of these common goods needs to be supported through both financial policies and non-financial instruments that will allow for public adaptations to take place (Wamsler & Raggars, 2018).

A study by Wamsler et al. (2019) revealed that in countries where citizen engagement occurs, it rather obstructs development than create stronger results. The constraints that citizens face, such as the barriers identified, create friction in adaptations causing delays or short-term results, ultimately resulting in the lack of citizen involvement. For example, citizens felt they were not able to interact with the municipality as they had a lack of information or there were existing prejudices to their process. While the municipality is shifting towards a more networking and co-creating organization, it still lacks organizational flexibility and support in order to be able to expand citizen involvement (Mees et al., 2019). Furthermore, the municipal workers themselves have their own cognitive, emotional, and relational influences regarding how they analyze aspects in the city, how they negotiate and ultimately make decisions on them which can lead to unique approaches that citizens do not control (Bristow, 2019). This is also seen in the expert interviews, where interviewee 4, coordinator of green adaptations in the city, worked alone and managed all these projects at the same time. It is especially interesting to know that he did so using his own methods and creativity, understanding what was needed from both citizens and the government itself to be able to finalize these projects.

The thesis, therefore, acknowledges the importance of commons for the future of sustainable development in the urban areas as well. I would go so far to say, that it is especially important in urban environments to have shared resources, as there are fewer opportunities to establish shared areas to be used compared to rural environments (Ozkan & Buyuksarac, 2020). Identifying the overlap in communing literature with that of participation and collaboration allows for the study to distinguish further that focusing on the middle level could have the largest multi-layered impact on the social structure of the city as well as long term effects on the sustainable development of the city, if allowed to grow and supported by the municipality.

6. Conclusion and reflection

The study aimed at answering the research question “*How do barriers to participation and collaboration limit sustainable development adaptations in the city of Groningen, the Netherlands?*” as the results are based on qualitative data, there is not a clear x equals y answer, rather a series of patterns are determined in current citizen interactions.

The thesis identified that the barriers to participation and collaboration do limit sustainable development adaptations in the city of Groningen mainly through the barriers of lack of information, lack of knowledge, lack of time, citizens economic background and the two externally caused barriers of property ownership and the issues attached to municipal governance. Each of these barriers influence citizens ability to participate in the three case studies that are included in this thesis. The study acknowledges that barriers will not be able to be eliminated completely, but the responsibility lies on citizens and most importantly the municipality to reduce the needed steps to overcome the barriers themselves. Most importantly, to manage the current transition the city of Groningen is in towards a green city, the municipality must increase their resources to overcome these barriers to citizen participation. Currently the citizens are unhappy with the lack of information and its transparency mostly, but there is a risk that without limiting other barriers, citizens will start to feel alienated if they are unable to participate and therefore will distance themselves from the positive possibilities available through adaptations besides green, such as community empowerment and bonding.

The initiatives looked at are increasingly successful, and the transition as mentioned by the results is going slowly, but in the right direction. There is no need of drastic changes to impact these barriers, rather, it is important for the municipality to become aware of their role as motivators and enablers of participation. And, crucially their role of limiting inequality will become more evident as their role becomes more supportive over time. The combination of citizens increased knowledge and information availability in the future, will allow for citizens to be able to determine their participation correctly and well informed, but currently, most citizens are not at this stage yet and the support of the municipality is crucial in Groningen. The thesis identifies that on Moser & Ekstroms (2010) scope and scale, the adaptations that take place here are those that currently citizens feel most identified with, having ownership on the results, and are pushing the boundaries to change their habits. The gardens of *Eetbaar Groningen* offered citizens a place to communicate and grow as a community which made them appreciate the project more, adding longevity to them. In the case of smaller adaptations with a small scope, such as *Operatie Steenbreek*, citizens like the idea, but their investment in them in the long-term was small, it did not cause them to change their habits around sustainable development. Lastly, in *Vitamine G*, my opinion is that the transition scales the whole policy offers is broad for citizens, there is still a lack of knowledge in the importance of this large-scale scope and citizens view each adaptation individually, losing track of the big picture. By focusing on the middle level of scope and scale, citizens are more involved as their role is increased and the importance of their participation is well established, even if it is just for the community.

Furthermore, the thesis identifies the important role inequality plays in barriers to participation. The idea that barriers limit participation is well established, but this thesis adds to the increasing discourse that inequality is further increased in areas through these barriers. Here, citizens are increasingly noticing the effects barriers are having on their possibilities regarding their daily lives, it increases social dilemmas such as how much can citizens

participate, what they have to sacrifice to do so and most importantly risking alienation from the community through not participating. Ultimately, it increases the importance of tackling and understanding these barriers even faster for the municipality, therefore avoiding increasing the needed resources to overcome the barriers.

6.1. Recommendation and improvements for future research

One limitation to the study is the limited number of interviews that were conducted, focusing on three different projects, it limited the time available to spend at each, therefore the results represent only a part of the citizens involved. The municipality, and the citizens themselves in my opinion would benefit greatly from a larger scale study that is able to understand the roots of the barriers and the timeline attached to these. An additional limitation in my opinion is the size of the case studies, in hindsight, with the focus of understanding citizens perceptions on adaptations it would have been beneficial to focus on one community only and the projects that fall within that community from the three projects chosen. This would allow for community comparison, creating a deeper understanding of where the barriers come from and if they are limited to certain areas or are part of a larger issue in within governance or citizens roles.

This research focused on three adaptations in the city of Groningen, *Operatie Steenbreek*, *Eetbaar Groningen*, and projects of *Vitamine G*. Even though, each project aims at representing different levels of participation and entry levels, these adaptations do not represent the entirety of each project that offer participation to citizens, therefore not all barriers can be identified, only those for the chosen adaptations. For future research I would recommend looking at projects supported by organizations separate from the government and their effect on participation and how it differs from municipality supported approaches. In the study, citizens mention the importance of community organizations that support inequality in the area, these can provide further understanding on how the feeling of inequality is currently in the city. Furthermore, the thesis has limited knowledge on bottom-up approaches that have limited support or aim at being independent from the municipality and what type of barriers they face in creation. Attached to this, the thesis looks only at successfully implemented adaptations, therefore at one point or other barriers were overcome. It would provide immense value to be able to look at projects that requested subsidies or support but were never able to be created or failed to become a pillar in the community. The value behind understanding the barriers that could not be overcome could provide a more critical look into the citizens perspectives and the role of the municipality.

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8. Appendix

Appendix 1 – Interview questions for thesis

General questions – all interviews

After discussing the purpose of this interview, and the main theme being adaptations towards sustainable development.

- **Could you describe how you view the importance of sustainable development for the city of Groningen?**
 - o **What do you associate with sustainable adaptations in the city? (Look for local examples)**
- **What do you feel the role of the citizens is in sustainable development?**
 - o **What is the role in the neighborhood?**
 - o **What is the role nationally/province?**
- **What do you feel the role of the government is in sustainable development?**
 - o **What is the role in the neighborhood?**
 - o **What is the role nationally/province?**

QUESTIONS FOR GOVERNMENT REPRESENTATIVES

- Could you tell me about yourself? What your role is within the government?
- Could you describe how you view the importance of sustainable development for the city of Groningen?
- Can you explain the role of the government in sustainable development adaptations in the city?
 - o What is its current role? Does this role change?
 - o Distinction between top down and bottom-up approaches?
- Could you explain how the municipality views collaboration with citizens?
 - o Are there concrete steps that have to be taken? Who chooses what collaboration approaches are used?
 - o How do projects ensure that there are citizens participating? What methods do you use to attract them?
 - o How do these methods differentiate between smaller community engagements and larger scale projects?
- Could you explain what citizen participation means for the municipality?
- How do you view the role of the municipality in creating more participation?
 - o What can the citizens themselves do to participate more?
 - o What barriers do you think exist in creating more participation? How can these be limited?
 - o Is the municipality able to monitor citizen participation?

Questions for no participation in the neighborhood

- Are you aware of any possibilities in your neighborhood to participate in sustainable adaptations?
 - o If yes (let him elaborate which) – Could you mention the reasoning behind not participating yourself in these adaptations?
 - o If no – Do you feel it is important for you to be informed about these possibilities in your neighborhood?

Questions for personal participation

(Let them elaborate on which adaptations)

- What moved you to participate yourself in these sustainable adaptations?
- Where did you learn about these possibilities and forms of sustainable adaptation?
- Do you feel the municipality should be more involved in creating knowledge for sustainable adaptations? (Why?) (How?)

QUESTIONS FOR ALL PROJECTS

- How did you get involved in the adaptation project?
 - o Who introduced you to it? How did they learn about it?
 - o If the municipality, how did they communicate this to you? (Ask about the process)
 - o When did you get involved in the project? (A creator? Joined later? – what prompted them to do either?)
 - o Was it complicated to get involved in the project?
- Who is involved in the project?
 - o What is your role in the adaptation project?
 - o What other people are involved? Neighbors, stakeholders, etc.?
 - o How does it feel to be involved with these other groups (stakeholders?)
- Are you happy with the results of the project?
 - o What makes you feel this way?
 - o What goals did you want to accomplish by joining?
- Do you have any past experience in such projects?
 - o How does it feel to participate for the first time?
 - o How is this experience different?
- Where there any complications in the process of the project?
 - o If no – how did you (and the rest) avoid having issues?
 - How did you communicate?
 - How did you ensure that everyone was involved?
 - o If yes – What complications? How were they solved? How long did this take?
- Do you feel there are benefits to participating in such a project?
 - o What benefits are there for you individually?
 - o What benefits are there for the community?
 - o What benefits are there for the government that you participate?
- How do you feel about others not participating in such a project? Does it bring anything negative to you? To the neighborhood?
- Do you think it is easy for other to participate in the project (or similar projects)?
 - o Why?
 - o Do you feel everyone is included? Who do you feel can be excluded?
 - o Do you think there are any barriers to participating in such a project?
- Would you participate in such a type of project again?

- Would you consider being involved in more sustainable adaptation projects in the future?
 - If yes – why do you feel that way? What changed in your perspective?
 - If no – why not? What can be improved in other projects?

EETBAAR GRONINGEN

- Who takes responsibility for the garden?
 - To what extent is the government/stakeholders involved?
 - What power do you as citizens have over the garden?
 - Do you have any power over the decision making? Would you like more power in future decisions?
- How long do you feel this project should exist?
 - How do you guarantee its existence? Can you?
- How do you feel the existence of such a project has impacted the neighborhood?
- To what extent do you feel the government should be involved in such a process?
 - Would you have engaged in such a project without the initial support from the government?
- Has participating in the project made you consider other types of sustainable adaptations in your home or surroundings?

OPERATIE STEENBEEK

- Would you have changed the façade of your building without the involvement of the municipality?
- Do you feel the municipality should be responsible in bringing such changes to the citizens?
 - What other role can the municipality have?
- Has such a change made you consider other types of sustainable adaptations in your home or surroundings?

PROJECTS OF VITAMIN G

- Did you have any expectations by collaborating in the process with the government?
- Has the process of collaboration changed aspects in the project? Has participation changed the outcomes of the project?
- Do you feel that participating at this level is important?
 - Who do you think should participate in such processes?
- Are there any difficulties in becoming part of such a process?
- Are there any difficulties that you or others faced in the process?
- What do you feel the role of the government should be in such processes?

Appendix 2 – Informed consent form example

DECLARATION OF INFORMED CONSENT

Research project name: Bonno van Wezel's master thesis work

This master thesis research investigates explore city-citizen interactions, creating a better understanding of the citizens perceived role in sustainable development and climate change adaptation at different levels. The study collects data on opinions, perceptions and knowledge

of respondents on collaborative policies in Groningen. Methodologically, it involves in-depth interviews with key informants and analysis of policy documents.

You have been invited to participate in this research as an interviewee.

Please provide your consent that

1. You have been informed about the purpose of the research;
2. You have spontaneously and in complete freedom accepted to be interviewed;
3. You consent the use of anonymized interview data for the research aims of the project, including its publication.

I declare that I am aware that:

- The research includes the collection of individual responses, opinions, evaluations
- each participant is free to ask for clarifications on the data collection procedure and about every other aspect of the project;
- each participant is free to leave the session in every moment;
- the eventual refusal to participate or the renunciation during the session will not involve any negative consequence for the participant;
- personal data collected for research purpose will not be transmitted to third parties;
- the collected personal data will be elaborated anonymously
- the research is conducted in the light of the University of Groningen's research ethics policy (see <https://www.rug.nl/about-ug/policy-and-strategy/research-ethics/?lang=en>)

Date _____

Signature _____

In case you believe you have been mistreated during this interview or for further information you may wish to have regarding the research process, please contact the thesis supervisor, Dr. Ethemcan Turhan (e.turhan@rug.nl), Assistant Professor of Environmental Planning.

Appendix 3 – Tables with interviews and expert interviews

Interview overview			
Operatie Steenbreek	Gender	Role	Location
Interview 1	Male	Participant	Niewe Kijk in het Jatstraat
Interview 2	Male	Participant	Niewe Kijk in het Jatstraat
Interview 3	Female	Participant	Grote Appelstraat
Interview 4	Male	Participant	Leeuwarderstraat
Interview 5	Male	Participant	Leeuwarderstraat
Interview 6	Male	Participant	Middenstraat
Interview 7	Female	Participant	Middenstraat
Interview 8	Female	Participant	Resedastraat
Eetbaar Groningen			
Interview 1	Female	Participant	Hof van Reseda
Interview 2	Male	Participant	Hof van Reseda
Interview 3	Female	Co-creator	Hof van Reseda

Interview 4	Male	Co-creator	Hortus Hof
Interview 5	Female	Participant	Geheime Tuin
Interview 6	Male	Participant	Geheime Tuin
Interview 7	Female	Co-creator	Geheime Tuin
Interview 8	Female	Participant	Hortus Hof
Vitamine G			
Interview 1	Male	Participant	CASMOPOR Park
Interview 2	Male	Participant	Selwerd
Interview 3	Female	Participant	Selwerd

Expert interviews overview		
Interview	Project involved in	Role description
Interview 1	Hof van Reseda	Current user of the garden and in charge of maintaining the garden and other activities that occur. Has been there for around 8 years, witnessed all the changes through time that occur in a community garden.
Interview 2	Geheime Tuin	Co-creator, focused on the social aspects of the community, trying to create cohesion, and learning opportunities to empower those around the project.
Interview 3	Toentje	Creator, has been able to expand the garden successfully creating room for other projects such as a restaurant and other community projects. Toentje is the largest community garden, and it focuses on providing for the food bank.
Interview 4	Eetbaar Groningen, Operatie Steenbreek	Coordinator of green projects in the municipality of Groningen. Oversees all green projects and has a strong understanding of the dynamics necessary to create and manage these successfully.
Interview 5	Eetbaar Groningen, Operatie Steenbreek, Vitamine G	Municipality of Groningen policy officer, was able to provide a context to the role of the municipality in these projects, but most importantly the direction the municipality wants to head in and their future role in participation.

Appendix 4 – Example letter created by citizens and municipality (In Dutch)

Groningen, 13 december 2021

Beste burens,

Met ongeveer 60 huishoudens wonen we rondom het gras- en speelveldje dat tussen de Gentiaanstraat en de Akeleiweg ligt. Er staan een paar speeltoestellen en een bankje op dit veld. Een groot gedeelte van het veld wordt nu nauwelijks gebruikt.



Met een aantal bewoners hebben we het plan opgevat om meer met deze ruimte te doen. We willen onze buurt graag groen houden en, voor wie dat wil, de onderlinge betrokkenheid versterken. We denken bijvoorbeeld aan het planten van fruitbomen en de aanleg van een kruidentuintje. Maar wellicht zijn er nog veel meer ideeën en mogelijkheden. Het idee is om alleen het eerste gedeelte van het veld aan de zijde van de Akeleiweg, in het verlengde van de parkeerplaats, te gebruiken. Er blijft dan genoeg ruimte over op het speelveld voor de speeltoestellen en de voetbalgoaltjes.

We hebben contact gehad met de gemeente. De betrokken ambtenaar is zeer positief over het plan om meer met het veldje te doen. En het leuke is dat de gemeente geld beschikbaar stelt om de plannen uit te voeren. De gemeente blijft het gras maaien. De buurt moet zelf de nieuwe voorziening onderhouden.

Kortom, er is heel wat mogelijk en het kost ons geen cent. Aan jullie de vraag wat je vindt van dit (nog verder te ontwikkelen) plan, welke ideeën je hebt en of je mee wilt werken aan de verdere uitwerking.

De gemeente wil wel graag weten of er voldoende draagvlak is voor dit plan. Dus stuur een reactie voor 31 december naar veldje.akelei.gentiaan@gmail.com.

In januari komen we weer bij elkaar om de plannen verder uit te werken. We hopen in het voorjaar echt aan de slag te gaan om misschien in het najaar van 2022 al de eerste resultaten te oogsten.

We zien uit naar jullie reactie.

Met vriendelijke groet,

De initiatiefnemers,
Marijke, Erica, Dagmar, Guus en Mariet

Appendix 5 – Examples of data collection method

2	Interview #	1	2	3	4	5
3	Questions	Importance – control over your own house, the importance of small steps that add to your neighborhood -> "adding your own grain of sand". - "It will create a greener city, greener is better for all sides. It has to happen at some point therefore it is better to do it as soon as possible." - Associates: solar panels, green roofs, biking lanes.	Important for the future of the city to keep updated with the surrounding world on the topic. If not, the city will become outdated. Associates: Recycling, green paths, green roofs.	The greener the city, the healthier citizens are. "I especially think that green cities should be standard, anything else is ugly..." . Associates: Eetbaar Groningen, Vitamine G, green roofs.	Thinks sustainable development is good for the city, all cities. It is good if Groningen gets a headstart. Many opportunities because of its smaller size. -> associates green energy the most.	She sees sustainable development as the future in cities, and she mentions that a city focusing on it has become a standard. Says a green city and a sustainable city should be the same. -> associates: green roofing, sustainable transportation.
4	1. (c)	Role of citizens: - "Make ourselves open to the government and add our own grain of sand" - "Don't close yourself off to unknown and hard possibilities as a citizen." - Voting for greener policies and government, but he thinks all political parties should have this.	"To be able to understand what is going on in the world regarding sustainable development and be able to apply it to your own life." "In the neighbourhood people should be more aware of the neighbours and their lives, while nationally feels far away to be involved in.	Citizens have the role of choosing the correct projects to be implemented. Voting and enabling policies. In the neighbourhood they should be open to communicate more -> people live in their own small bubbles of their house only.	Citizens have a smaller role because they can lack the knowledge needed to do big changes. Role is more to the community developments, and voting for the correct changes -> sustainable development is a very big step and needs time	Citizens are those that decide the government, their role is to make these decisions well. To do so, the process has to be open and honest. "Citizens can not make decisions if we barely know the impact they have... especially with something for the future". In the community, citizens should be able to come together and create their own sustainability approaches. "I don't think it works if we are forced to do something, people need to have the option, but they need to be clear of the benefits of this."
5	(d)	Bring in new ideas, sponsor constant innovation, investing and learning from other projects. - In a community: support smaller projects and provide information about different possibilities to participate.	"The government should be responsible in large changes to the city and country, because they know everything that goes on at different levels" - Citizens do not know how everything is connected, and their role is deciding the government that is able to take on big choices for them.	"The government must be constantly innovating against the changes in the environment... they really have to do this with citizens" -> otherwise they will not understand the needed changes. In the neighbourhood they need to have a supportive role.	The government takes on the bigger changes, but citizens should push them to it. Promote, and should force change and be less afraid of the consequences or it can take too long -> there is a time limit. Give time to smaller community changes, but hurry large scale operations -> ? the processes involve too many parties in both scenarios	The government should be responsible of having a clear goal, and having concrete steps on how to achieve it -> "Just saying we will be CO2 neutral by x year is very vague, it makes me think it's not really possible". In community -> municipality doing a good job in being community focused, but they should connect more the whole city -> don't want to divide the city
6	(e)	The neighbours had it as well. it	Heard from a friend that works in the	From a friend, joined in the veru	Saw it online on social media	Online, social media.
<p>← ▶ ... Operatie Steenbeek notes Eetbaar Groningen notes Participation notes - VitamineG Sheet6 Sheet1 Shee</p>						

4	A	B	C	D	E	F
3. (a)	Learned from the neighbour when they moved in and then joined the next season. Doesn't know well how the process went, but know that municipality facilitated with clearing the ground and providing initial seeds and boxes. -> not complicated, they had space and were eager for people to join.	Got in when they moved in. Knows very little about how it was set up -> got immediately informed about it when he moved in, only complication was finding the time to learn.	Was approached by a neighbour to set it up. He knew a lot about plants and was interested in creating this for the area -> didn't talk a lot before. He made the plan for the municipality, they helped set up, she helped with communicating to the neighbours -> municipality gave her tips. At first people were doubting if they had time and energy to start it up, but a success.	Was the initial person to set it up. It was a trend in many other parts. Felt it fitted the area, there was green space and he knew some neighbours. -> He had the knowledge needed and the contacts to get municipality interested. -> neighbours agreed and they met with municipality -> flattened area and cleared bushes, provided boxes.	A good friend of the person that set it up. Joined her to help her with the daily tasks. Project started in private property, no need of involvement from the municipality. -> community center first, garden second. Was needed for people in the community as a support place (low income area).	
4. (b)	Most of the neighbours from the street, some on and off depending on their time. People can not join from outside the community. She enjoys participating together, it has a couple of years and they get better at it, they share the crops and it has caused them to become closer with time, even if its just knowing each other.	A large part of the neighbours, except some families and some elderly people. They still come to gatherings and meetings -> municipality workers came by at beginning to see progress, not anymore.	Most neighbours are involved, they all share the same role. Only one person has the role of communicating with municipality in case of help. -> they enjoy making decisions together, even if it can cause some discussions as then it does not feel one sided.	He tried to involve everyone -> municipality said it can be hard, everyone has different interest. Some people struggled with the idea at the start "A new idea is always hard, especially if it is unknown, but I gave them all the information and told them we would all take responsibility and that helped a lot:	Project is run by volunteers, mostly people in the area. There are different workshops and space for a library -> community garden for everyone to use, also chickens. -> people appreciate the support system that exists.	
5. (c)	Yes, "I did not help set it up, but over the years I have become proud of what we have achieved, and every year I look forward to it." -> For her kids it has also been very helpful, to play in the garden with other children and learn about food, has a lot of benefits.	"I like this place a lot, in the summer it becomes a very nice area and the neighbours have become friends which does not happen a lot when you move into a city." -> my goal when joining was to become closer to the community	Yes, very happy. She had lived there a while and never expected the community to become so close. At first it was about the green and the food, but it grew into community activities.	First goal was to create a food garden, but now it grew into a meeting place and a real community space. -> glad about it.	Yes, she feels that in such a neighbourhood there must be flexibility in support. People in same circumstances understand each other better -> wants more support and network from similar organizations.	
6. (d)	No past experiences (did have OSB, previous house owner), enjoys participating and feels it should be standard in all neighbourhoods. -> Mentions that there are 2 people that have managed everything well, and set it up, does not think she would have done it herself.	No past experience, feels like he knows very little about sustainable development, does not know where to learn these things. Did not even know EG existed.	No, OSB. "I have always been doubtful about participating as it felt I needed to know things about sustainability or roads, I later realized it was more about our thoughts... it was not very clear."	Had participated in projects before, aware of the struggles they can face. Expertise in sustainability. "Participation is hard, for both sides, that's what I try to think... I have to be able to understand complex ideas in less time, and they have to understand social complexities they don't live in."	For herself, good to help other people in need. The garden allows for other interactions to occur that would otherwise not happen in the community. -> for the municipality they are a helpful place to reach citizens, mediaty.	
7.	No big complications, small things like insects, lack of soil, etc. This could be together as and	Not that he is aware of, he knows the process of setting up your backdub.	Convincing some people was hard, municipality helped with creating a good	Setting up the plan was hard, was one of the first meetings in the city. The process was	"I think it takes time to join these things, once you have others, benefits are not included in	
<p>← ▶ ... Operatie Steenbeek notes Eetbaar Groningen notes Participation notes - VitamineG Sheet6 Sheet1 Sheet2 (+)</p>						