Supporting Green Citizen Initiatives

A case study on actor roles for stimulation and facilitation of citizen initiatives for urban greenspace in Groningen

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Supporting green citizen initiatives: A case study on actor roles for facilitation and stimulation of green citizen initiatives in Groningen

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Abbreviations

CI	Citizen initiative
GCI	Green citizen initiative
SNA	Social Network Analysis
SNM	Social network map

Abstract

Dutch cities are coping with low biodiversity rates, a widening gap between people and nature, and the negative effects of climate change. Urban greenspace has many environmental and social benefits, which are essential for creating livable cities. Green citizen initiatives - groups of citizens that take action to realize and/or preserve urban greenspace - are an increasingly important actor in urban greenspace management. This case study research assesses how green citizen initiatives in the city of Groningen are supported by three types of "professional actors": the local government, nonprofit organizations, and local companies. Also, the research formulates suggestions for how this support could be improved.

The framework of 11 support roles to stimulate and facilitate citizen initiatives of Oude Vrielink & Van de Wijdeven (2007) was used to analyze in which ways green citizen initiatives in Groningen are supported. Three research methods were used to find an answer to this question. First, Social Network Analysis was used to create a map that visualizes the network of interactions between the large number of actors that are involved with urban greenspace in Groningen. Second, Municipality policy document analysis was used to gain insight into how the local government aims to support green citizen initiatives, and which requirements and procedures are associated with initiating a green citizen initiative. Finally, in-depth interviews were held with members of green citizen initiatives and employees of the local government, nonprofit organizations, and local companies that support green citizen initiatives, to gain more in-depth insight into how the support for initiatives takes shape in practice, and which aspects could be improved.

The results show that the Municipality of Groningen and nonprofit organizations are the main actors that support green citizen initiatives. The Municipality mainly focuses on instrumental facilitation of initiatives through financing. Nonprofit organizations are focused on the stimulation of new initiatives through marketing and communication. Finally, local companies play a small role as well by providing information for initiatives. On the whole, mainly support initiatives with an instrumental approach, often linked to procedural frameworks and requirements. However, the initiatives would benefit from an improved balance between instrumental support approaches and more flexible and personal support approaches. By focusing more on the personal empowerment of initiators and being more flexible in giving support by valuating both direct and indirect benefits, professional actors can become more citizen-oriented and improve the support for green citizen initiatives.

Keywords: Urban Greenspace, Green Citizen Initiatives, Support, Actor Roles, Social Network Analysis

Abstract (in Dutch)

Nederlandse steden hebben te maken met verschillende problemen, zoals biodiversiteitsverlies, een kloof tussen mensen en natuur, en de negatieve effecten van klimaatverandering. Stedelijk groen heeft veel sociale en ecologische voordelen, die essentieel zijn voor het creëren van een leefbare stedelijke omgeving. Groene bewonersinitiatieven – groepen bewoners die zich inzetten voor de ontwikkeling en/of het onderhoud van stedelijk groen – worden steeds belangrijker binnen het beheer van stedelijk groen. Deze casestudy onderzoekt hoe groene bewonersinitiatieven in de stad Groningen worden ondersteund door drie soorten "professionele partijen": de lokale overheid, non-profit organisaties en lokale bedrijven. Ook worden suggesties geformuleerd voor hoe de ondersteuning van groene bewonersinitiatieven verbeterd kan worden.

De typologie van 11 rollen van ondersteuning van bewonersinitiatieven van Oude Vrielink & Van de Wijdeven (2011) is gebruikt om te analyseren hoe groeninitiatieven in Groningen worden gestimuleerd en gefaciliteerd. Drie onderzoeksmethoden zijn gebruikt om een antwoord op deze vraag te vinden. Ten eerste is door middel van Sociale Netwerk Analyse in kaart gebracht welke actoren betrokken zijn bij stedelijk groen in Groningen en hoe de interactie tussen deze partijen eruit ziet. Ten tweede is een beleidsanalyse van gemeentelijke documenten gedaan om inzicht te krijgen in hoe de Gemeente Groningen beoogd om groene bewonersinitiatieven te ondersteunen. Ten slotte zijn er diepte-interviews gehouden met leden van groene bewonersinitiatieven en medewerkers van professionele partijen die groeninitiatieven ondersteunen. Op deze manier wordt inzicht verkregen in hoe de ondersteuning in de praktijk vorm krijgt en welke aspecten van de ondersteuning verbeter zouden kunnen worden.

De resultaten tonen aan dat voornamelijk de Gemeente Groningen en non-profit organisaties zich bezighouden met de ondersteuning van groeninitiatieven. De Gemeente is vooral gefocust op instrumentele facilitering van initiatieven door financiële ondersteuning. Non-profit organisaties focussen zich vooral op het stimuleren van het ontstaan van nieuwe groeninitiatieven door de rol van P.R. en communicatiemedewerker te spelen. Tot slot spelen lokale groenbedrijven ook een kleine rol in ondersteuning van groeninitiatieven door middel van het verstrekken van informatie. Algeheel worden groeninitiatieven voornamelijk ondersteund met een instrumentele benadering, wat inhoudt dat er aan de hand van kaders en procedures ondersteuning wordt verleend. De groeninitiatieven zouden echter profiteren van een betere balans tussen instrumentele ondersteuning en persoonlijke ondersteuning. Door zich meer te focussen op het empoweren van initiatiefnemers, en door meer flexibel te zijn in het geven van ondersteuning door zowel de directe als indirecte waarde van de initiatieven te erkennen, kunnen professionele partijen burgergericht te werk gaan en de ondersteuning van groeninitiatieven verbeteren.

Trefwoorden: Stedelijk Groen, Groene Bewonersinitiatieven, Ondersteuning, Rollen, Sociale Netwerk Analyse

Reading guide

This structure of this document is as follows: Chapter 1 describes the introduction and current relevance of the subject of citizen initiatives for urban greenspace. Subsequently, the problem statement, research objectives and corresponding research questions are discussed. Chapter 2 describes the relevant theories and concepts related to urban greenspace management and green citizen initiatives. The research methodology that was used to find an answer to the research questions is explained in Chapter 3. Next, Chapter 4 describes the results of the research. These results are reflected and discussed in Chapter 5. Finally, Chapter 5 also draws conclusions and proposes recommendations for the support of green citizen initiatives, as well as recommendations for future research.

1. Introduction

1.1 Cities: essential areas for biodiversity and connecting citizens to nature

Biodiversity is essential for healthy ecosystems and the provision of ecosystem services that contribute to human welfare and livelihood (Christie et al., 2012). The loss of biodiversity is a great threat to humanity, especially since the extinction of species is an irreversible process (Maillard & Gonzalez, 2006). In the Netherlands, biodiversity has decreased considerably more as compared to other European countries and other parts of the world. The Dutch biodiversity, expressed as Mean Species Abundance, has dropped to circa 15% of the original populations of plant and animal species (Compendium voor de Leefomgeving, 2016). An important reason for biodiversity loss in the Netherlands is the vast urbanization rate of 92% as urban environments are usually characterized by a lower species diversity rate than wildlands (Chace & Walsh, 2006; Marzluff, 2001).

General attention for nature and biodiversity is relatively low in the Netherlands due to a widening gap between people and nature, a lack of knowledge, and a lack of problem awareness (Hooykaas et al., 2020). Especially for many people living in urban areas, nature is often perceived as something far removed from their daily lives (Dearborn & Kark, 2009). However, in the Netherlands, about 10% of all species depend on urban areas, along with many other species that partially reside in urban environments (Lahr et al., 2014). Alongside, the largely urban human population of the Netherlands is also highly dependent on nature in urban areas, also called "urban greenspaces". There are various examples of urban greenspaces, such as urban parks, urban forests, community gardens, trails, street trees, private gardens, and green roofs (Hernandez et al., 2018). These urban greenspaces deliver various essential services for humans, such as food, health benefits, a contribution to the urban climate, opportunities for recreation and relaxation, and a reduction of stress (PBL, 2010). Additionally, green urban areas play a key role in climate adaptation through the reduction of negative climate change effects such as the "urban heat island effect" (Dover, 2015). On top of that, greenspaces in urban areas have a positive influence on human well-being as they provide the opportunity to connect urban dwellers to nature, which can lead to a greater sense of responsibility and more active citizen involvement (Dennis & James, 2015). In short, urban greenspace delivers many essential environmental and social services. Therefore, the realization and preservation of urban greenspaces are essential for conserving and improving biodiversity and for connecting citizens to nature. Nevertheless, there is a general lack of attention for urban nature by spatial planners and citizens (Hooykaas et al., 2020). This absence of awareness makes it difficult for Dutch cities to develop and preserve urban greenspaces.

1.2 The city of Groningen: opportunities for improvement of urban greenspace

An example of a Dutch city that experiences multiple trends that are threatening urban nature is the city of Groningen. The first trend that threatens ecological quality is that Groningen has dealt with large population growth over the past years. The total population of the city of Groningen has risen from 170,670 inhabitants in 1995 to 203,105 in 2020 (CBS, 2020b). Consequently, many greenspaces in Groningen, such as the "Noorderplantsoen" urban park (Figure 1), are under high usage pressure due to a lack of accessible green areas in the neighborhoods with the highest population densities (Gemeente Groningen, 2020). Additionally, infrastructure cuts through multiple urban ecological structures and, thereby, creates obstacles for the movement of species (Gemeente Groningen, 2020). Moreover, Groningen is also dealing with additional issues related to climate change and urbanization, such as extreme rainfall and flooding, and the urban heat island effect (Gemeente Groningen, 2016).

Figure 1: Illustration of the high usage pressure on urban greenspace in Groningen: A crowded summer day at the Noorderplantsoen urban park. Source: Dagblad van het Noorden (2020).

As a response to these issues, the Municipality started working on action plans to develop and enhance urban greenspace. The attention for urban greenspace in the city of Groningen has received a boost in 2020. For example, a local coalition of organizations called "Klimaatadaptatie Groningen" was set up in 2020, to organize multiple activities to raise awareness for climate adaptation, such as an action to win a green roof or a tree dripline garden (Klimaatadaptatie Groningen, 2020). Also, a foundation called "Stichting Steenbreek" organized multiple campaigns to promote urban greenspace amongst citizens, such as "Tegel Eruit, Tuin erin" (remove the tiles, embrace the garden). Further, in October 2020 the first

"green mayor" of the Netherlands was appointed in Groningen, to promote the greening of the city (GIC, 2020). Finally, a policy document called "Groenplan Vitamine G" was published in June 2020 (Gemeente Groningen, 2020). The directive of the action plan is to develop and enhance urban greenspaces, to increase liveability, health, climate adaptation, and biodiversity.

There is an interdependency between the Municipality and other actors for urban greenspace realization and preservation, or in other words urban greenspace management (*UGM*). Groenplan Vitamine G emphasizes that the collaboration between multiple actors, such as citizens, organizations, and companies is essential for UGM (Gemeente Groningen, 2020). For example, the policy plan states that the Municipality will focus on the participation of citizens in UGM and stimulate them to start their own green initiatives. Hence, citizens will "be given the ability to develop and implement their initiatives" (Gemeente Groningen, 2020, p.16). For example, citizens can receive subsidies to apply greenery to their living environment. To reach the policy goal of connecting the efforts of green citizen initiatives (*GCIs*) to the Municipality's efforts, an important step is to first improve the support for these initiatives. Therefore, this research will analyze how GCIs in Groningen are currently supported by "professional actors", which are defined as the local government, nonprofit organizations, and local companies that support GCIs. Also, this study will assess how this support could be improved.

1.3 The context of urban greenspace management: from government to governance

Urban greenspace management is defined as a combination of (1) activities for urban greenspace *realization*: the planning and design of new urban greenspaces, and (2) *preservation*: conserving the qualities of the urban greenspaces (Mattijssen et al., 2017). If we want to analyze how GCIs are supported by professional actors, it is important to first understand the roles GCIs and professional actors play within UGM.

UGM has often been incorporated in urban planning and design, especially in developed countries (Hansen et al., 2015). Historically, public authorities have been in charge of managing public urban greenspaces (Molin & Konijnendijk van den Bosch, 2014). However, in the last decades, there has been increasing scepticism about the actions of dominant state actors because of their lack of interest to adopt an ecological agenda, while other goals such as economic development and transportation are often prioritized (Ahern, 2013). Therefore, in Europe, greenspace development often stays behind in urban development (Pauleit et al., 2005). Since the 1980s, civil society performs a new role in this regard: it has become an important actor in UGM in western countries (Wittmayer et al., 2017). For example, citizen initiatives have become involved in UGM in the Netherlands and other EU-countries (Mattijssen et al., 2018). Such "green citizen initiatives" are defined as initiatives in which citizens take action to manage (i.e. realize and/or preserve) urban greenspaces (Mattijssen et al., 2018). Examples of GCIs are public gardens, interest groups for nature conservation, residents' initiatives for more trees in their neighborhood, etc. GCIs are a key step in improving UGM and biodiversity (Buijs et al., 2017) because citizen action for urban greenspaces has large ecological potential and additional associated gains, such as social cohesion, individual well-being, and sense of responsibility (Dennis & James, 2015).

Although GCIs have many benefits, there are also some challenges involved with these initiatives. For example, it is often difficult for them to gather enough participants to perform their tasks. Also, there are issues of representativeness: citizens with the loudest voice are often the ones that get their say (Molin & Konijnendijk van den Bosch, 2014). Additionally, it is generally easier for wealthier communities to participate in environmental initiatives, and to acquire the necessary resources (Merritt & Stubs, 2012). Furthermore, CIs often experience a lack of financial resources, organization capacity and power (Igalla et al., 2019). There is also a specific challenge for *green* citizen initiatives: often, problems occur because volunteers lack the skills and knowledge that are necessary for the activities to manage the urban greenspaces (Ghose & Pettygrove, 2014). For example, citizens might not have knowledge about which plant species contribute to a healthy ecosystem and which are destructive. Because of these obstacles, the efforts of CIs are often assisted by professional actors (Buijs et al., 2019).

The increased involvement of GCIs in UGM illustrates the changing relationship between public authorities and citizens, often referred to as "the transition from government to governance" (Eliassen & van Vliet, 1993). Also, local companies and nonprofit organizations are now frequently involved in the management of urban greenspace in the Netherlands (Mattijssen et al., 2018b). This collaboration between CIs and other professional actors could create synergies for producing public services (Ostrom, 1996), such as the realization and preservation of urban greenspaces. Associated with this shift, the roles of public authorities such as local governments are increasingly understood as moving away from "controlling" and

"containing" and shifting towards roles such as "facilitating" and "stimulating" the initiatives of citizens (Wittmayer et al., 2017). Currently, the support for CIs is often exercised as an "instrument" to mobilize citizen action. However, this creates friction, as the government wants to have a supplementary role instead of taking the lead like they are used to (Geurtz & Van de Wijdeven, 2010). Professional actors in the Netherlands are still largely uncertain about how to facilitate and stimulate GCIs, and how to interact with them (Van der Heijden et al., 2007). However, it is important to establish good relations between CIs and actors that facilitate and stimulate them, as CIs benefit a lot from the support of other actors (Fung, 2004).

1.4 Filling the knowledge gap

The scientific literature on urban landscape management and land use planning expresses concern about the sustainability of urbanization (Aalbers, 2018). At the same time, scientific knowledge on urban greenspace and its corresponding benefits has grown considerably over the years (Botzat et al., 2016).

Although there is a relatively high understanding of the multiple functions of urban greenspaces, urban greenspace is often not well integrated into the planning, design, and management process (Yli-Pelkonen & Niemelä, 2005; Sandström et al., 2006). Also, reliable and robust decision-making about urban greenspaces are frequently absent (Tyrväinen, 2001; Doick et al., 2018). Therefore, scientific literature calls for more local empirical research on the management of urban greenspaces (Aalbers, 2018). Also, large systematic research reviews indicate that there has been a lack of scientific attention for citizen's participation in UGM (Ostoíc & Konijnendijk van den Bosch, 2015; Luederitz et al., 2015; Kabisch et al., 2015). For example, there are no clear guidelines and theories on how to stimulate and facilitate CIs (Van Stokkom & Toenders, 2010). Moreover, there is a knowledge gap on the (changing) interactions and relations of actors as part of sustainability transitions and their governance (Wittmayer et al., 2017). Conceptual understandings of what the new facilitating and stimulating roles for local goverments, organizations, and businesses might entail are not yet well developed (Mees et al., 2019). At the same time, empirical knowledge of whether and to what extent governments, organizations, and businesses are moving towards these roles is lacking (Mees et al., 2019). In short, there is a knowledge gap on how professional actors currently stimulate and facilitate GCIs, and there is a lack of theory on how to support (green) citizen initiatives.

1.5 Research objectives and questions

This research responds to the call by Aalbers (2018), Van Stokkom & Toenders (2010), Wittmayer et al. (2017), and Mees et al. (2019) for more local empirical research on UGM, with a specific focus on the roles and interactions of professional actors (i.e. local government, nonprofit organizations, and local companies) that facilitate and stimulate GCIs, as well as the GCIs themselves.

The objective of this case study is to twofold: (1) to identify which roles professional actors play while stimulating and facilitating GCIs in Groningen and how this could be improved, and (2): to analyze how the local government, citizen initiatives, nonprofit organizations and local companies interact for UGM. This study will, therefore, focus on four types of actors: the local government (the Municipality of Groningen), private actors (local companies), nonprofit organizations, and civil society actors (citizen initiatives). First, a policy document analysis of Municipality policy will be done, to learn about how and why the local government aims to support GCIs. Second, semi-structured in-depth interviews will be held with members of GCIs, and employees of the local government, nonprofit organizations, and local companies. This qualitative data collection will help to achieve both research objectives, by gathering information on the roles and interactions of actors. To reach the second objective, Social Network Analysis (*SNA*) will be used, to create a map with actors (nodes) and their interactions (ties). This type of stakeholder mapping will be useful to visualize the diverse set of actors, their ties (who collaborates with whom?), and their patterns of interaction (Ernstson et al., 2008). The actors and their interactions will be identified through online questionnaires. The research objectives will be achieved by answering the following research questions:

Main research question:

How are citizen initiatives for urban greenspace management in Groningen stimulated and facilitated by the local government, nonprofit organizations, and local companies, and how could this be improved?

Secondary research questions:

1. How does the emergence of citizen initiatives change the context of urban greenspace management? *(theoretical)*
2. Which roles can public authorities, nonprofit organizations, and local businesses take in stimulating and facilitating green citizen initiatives? *(theoretical)*
3. Which actors are involved in urban greenspace management in Groningen and how do they interact with each other? *(empirical)*
4. Which roles do the local government, nonprofit organizations, and local companies currently play while stimulating and facilitating green citizen initiatives in Groningen? *(empirical)*
5. Which challenges do green citizen initiatives in the city of Groningen encounter? *(empirical)*

1.6 Academic and societal relevance: Creating nature-friendly cities

The results of this study will be valuable for the planning field, as over the past decades, citizen participation has become an increasingly important topic for urban planners (Ansell & Gash, 2008). This research will provide insights into the roles of the local government, CIs, nonprofit organizations, and companies for greenspace management in urban areas. Also, this study will shed light on the interaction between experts, such as urban planners from local governments, and non-state actors: citizen initiatives. The results of this study will be especially valuable for the field of environmental planning, as the increased knowledge about interactions in UGM might help to enhance greenspaces in urban areas, which could partly contribute to solving multiple environmental problems, such as low biodiversity rates and air pollution (Dover, 2015).

The academic relevance of this research is to create local, in-depth knowledge about the interactions and roles of actors, to fill the knowledge gap of how GCIs could and should be supported by professional actors (Van Stokkom & Toenders, 2010). This study will therefore create knowledge about how facilitation and stimulation of GCIs takes shape in real life. Also, the research will create an increased conceptual understanding of what the new facilitating and stimulating roles entail for the local government, nonprofit organizations, and local companies.

Additionally, the results of the research will have practical, societal relevance. First of all, a higher understanding and visualization of the roles of stakeholders in local UGM might lead to a more effective collaboration amongst stakeholders, which could lead to synergies, for example in terms of a higher rate of successful projects that lead to urban greenspace enhancement. More efficient collaboration in UGM could lead to an enhancement of urban greenspaces, which in turn could improve multiple aspects of the urban living environment (Dover, 2015). Consequently, the outcomes of this research could help achieve multiple environmental and social policy goals, such as the aims of Groenplan Vitamine G. Therefore, the research will also contribute to the task of creating nature-friendly and sustainable cities.

2. Theoretical framework

2.1 The benefits of urban greenspace: ecosystem functions & ecosystems services

"Urbanization" is often defined as the phenomenon that an increasing part of the population is living in urban settlements (Poston & Bouvier, 2010). Urbanization rates in the Netherlands have continued to grow as currently 92% of the Dutch population lives in urban areas, making it the thirteenth most urbanized country in the world (Central Intelligence Agency, 2020). Also, the surface of urban areas has grown by 600 km² between 1996 and 2015, which means that an increasing part of the country is covered by urban areas (CBS, 2019). Urbanization in the Netherlands is expected to rise even more in the next decades (CBS, 2016). Although urban areas are powerful agents of modernization and development, they often face multiple difficulties (Zhao et al., 2017). This stresses the urgency to create future-proof sustainable cities that can cope with the environmental and social challenges of urbanization processes, to create a healthy and sustainable living environment for both humans, as well as plant and animal species. Urban greenspaces have the potential to mitigate many of the negative effects of urbanization (De Ridder et al., 2004). Also, urban greenspace offers crucial environmental benefits, while it is also essential to the life of urban dwellers (Schwarz et al., 2017; Dennis & James, 2015). The benefits of urban greenspace can be divided into two categories: environmental benefits (ecosystem functions) and social & economic benefits (ecosystem services) (Escobedo et al., 2011).

Environmental benefits: ecosystem functions
The intermediate effects of urban greenspace on pollutants and other environmental processes are referred to as "ecosystem functions" (Escobedo et al., 2011). Ecosystems are spatially and temporally explicit units that include the abiotic environment, all living organisms, and the interactions between these two (Millennium Ecosystem Assessment, 2005). In general, the enhancement of urban greenspace leads to improved urban biodiversity, in terms of species diversity (Schwarz et al., 2017). Well-designed urban greenspaces can provide habitat for different species that are affected by urban land-use change (Oberndorfer et al., 2007; Brenneisen, 2003). Urban greenspaces may also act as wildlife corridors, which are small habitat patches that enable species to move through the urban landscape (Dover, 2015). Also, sometimes, rare and endangered species with large conservation value can be found in urban habitats (Gairola & Noresah, 2010). In short, urban greenspaces offer important refuges for remnant biodiversity.

Social & economic benefits: ecosystem services
Besides ecosystem functions, urban greenspace also delivers "ecosystem services", which are defined as the components of urban greenspace that are used for human well-being (Escobedo et al., 2011). The ecological literature often describes ecosystem services as the direct, specific results of ecosystem functions, that either directly sustain or enhance human life and well-being (Daily, 1997). Therefore, ecosystem services are the components of urban greenspace that are directly enjoyed, consumed, or used to produce human benefits (Escobedo et al., 2011). The provision of these vital ecosystem services makes urban greenspace a fundamental part of sustainable urban development (Haaland & Konijnendijk van den Bosch, 2015). Based on the categorization of the Millennium Ecosystem Assessment (2005) and Kumar (2010),

ecosystem services of urban greenspace can be grouped into three categories: (1) provisioning, (2) regulating, and (3) cultural ecosystem services. The three categories of ecosystem services and the underlying ecosystem functions are visualized with accompanying examples in Figure 2.
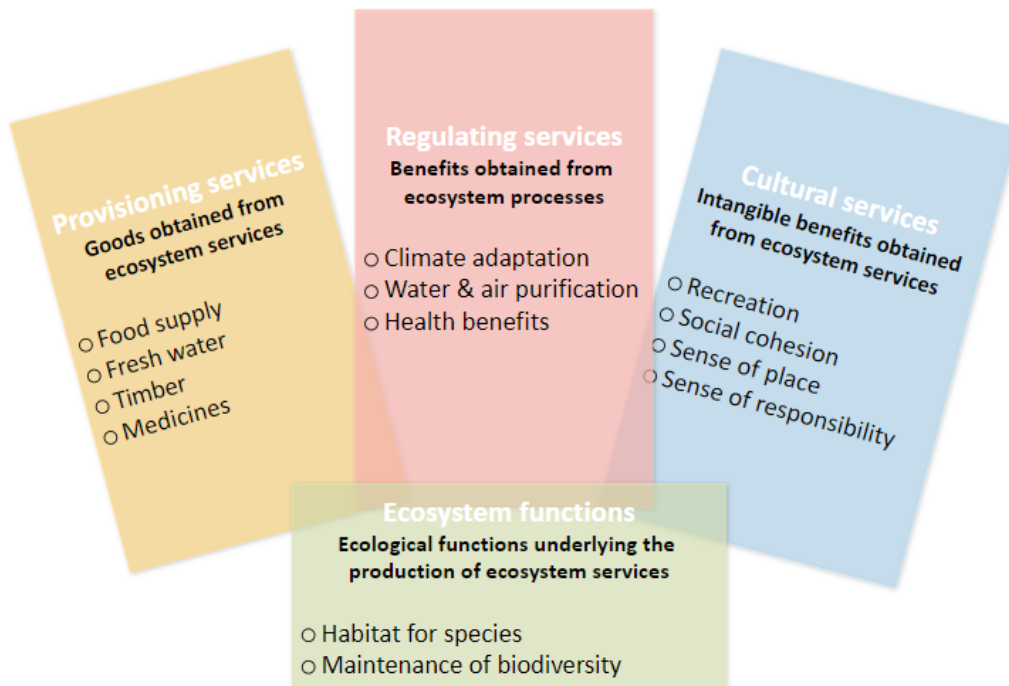
Figure 2: Classification of ecosystem functions and ecosystem services. Based on the Millennium Ecosystem Assessment (2005) and Kumar (2010). Source: Author.

First, provisioning ecosystem services include all the tangible, material products obtained from ecosystems, such as fresh water, food, medicines, and timber (Elmqvist et al., 2013). For example, an important provisioning ecosystem service of urban greenspace urban food production in community gardens (Andersson et al., 2007; Barthel et al., 2010). Provisioning services can be used for human consumption and have economic value, and therefore, they are essential for human well-being.

Second, regulating ecosystem services include all the human benefits obtained from ecosystem processes, including the regulation of climate, water, and certain human diseases (Elmqvist et al., 2013). An example of a "regulating" ecosystem service is the contribution of urban greenspace to urban residents' health. For instance, mere visual exposure to nature can reduce stress and mental fatigue and, thereby, improve people's well-being and health (Groenewegen et al., 2006). Additionally, increasingly biodiverse urban greenspaces have been associated with subjective and psychological well-being (Fuller et al., 2007; Carrus et al., 2015). Also, green areas have the potential to mitigate some of the negative effects of urbanization (De Ridder et al., 2004). For example, urban greenspace plays a key role in climate adaptation through the reduction of the urban heat island effect by providing shade and cooling down areas (Dover, 2015). Also, urban greenery such as trees may reduce air pollution by absorbing pollutants from the atmosphere (Nowak et al., 2006). Moreover, urban greenspace could remove groundwater pollution, mute noise, and moderate storm-water flooding (Wolch et al., 2014). These environmental benefits might improve the health of urban residents because the

negative effects of urbanization, such as air pollution, can create serious health problems (Wolch et al., 2014). Furthermore, many studies demonstrated linkages between proximity to urban greenspaces such as parks and physical activity, which is associated with a healthy lifestyle (Center, 1996; Bush et al., 2007; Grahn & Stigsdotter, 2010). Therefore, a major ecosystem service of urban greenspace is the contribution to urban residents' health and well-being.

Finally, cultural ecosystem services are the intangible, non-material benefits that humans obtain from ecosystems (Elmqvist et al., 2013). For example, greenspaces in urban environments deliver recreational opportunities, such as cycling, jogging, or picnicking (Konijnendijk et al., 2006). Also, urban greenspace contributes to the sense of place, sense of responsibility, and social cohesion among urban communities (Dennis & James, 2015). Especially spending time in urban greenspaces together with other people, for example through urban gardening, brings communities together and correlates positively with social contact amongst neighborhood residents (Okvat & Zautra, 2011). Therefore, GCIs have many associated gains, such as social cohesion and a sense of responsibility (Dennis & James, 2015).

The above-mentioned ecosystem functions and services are essential to this research, as the practices of GCIs often lead to the creation and maintenance of greenspaces and, therefore, they produce ecosystem functions and services (Krasny et al., 2014). Hence, the concepts of ecosystem functions and ecosystem services demonstrate the usefulness of the activities of GCIs, both to policymakers and citizens. Therefore, ecosystem functions and services are a means to understand and communicate the value of the work of members of GCIs (Chan et al., 2012). The ecosystem functions and services might serve as a trigger to participate in a GCI, just like the negative effects of urbanization and the desire to combat these issues. These interrelations between the urbanization related issues, GCIs, urban greenspace, and ecosystem functions and services are visualized in Figure 3.
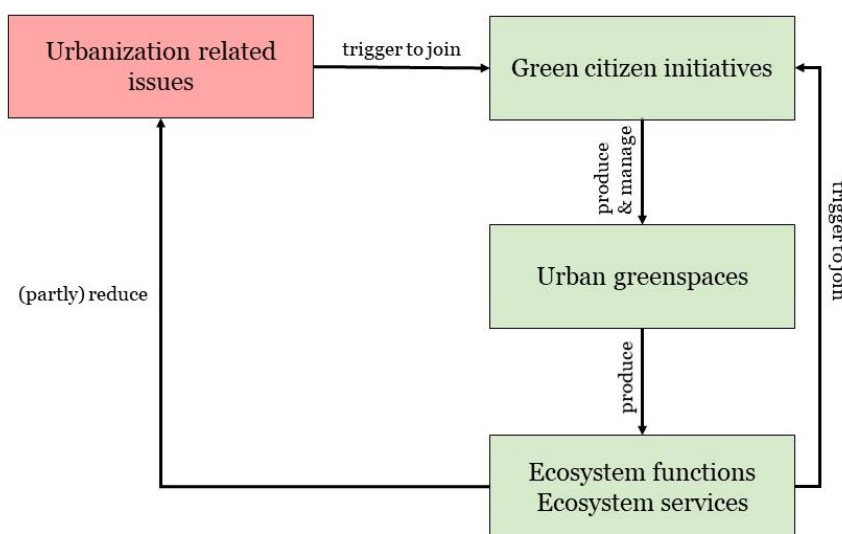
Figure 3: The relationships between urbanization related issues, GCIs, urban greenspace, and ecosystem functions and services. Source: Author.

2.2 Defining urban greenspace

Definitions of urban greenspace vary widely, and there is scientific debate on the concepts meaning (Konijnendijk et al., 2006). Therefore, it is important to define the meaning for the specific context related to this research (Taylor & Hochuli, 2017). Urban greenspace can be broadly defined as "any bodies of water or vegetation found in the urban environment" (Kabisch & Haase, 2013, p. 113). This definition refers to the overarching concept of nature, but more adequate and specific definitions of urban greenspace are needed (Taylor & Hochuli, 2017). The definition of urban greenspace can be determined by specifying three elements: (1) the benefits and values of the urban greenspaces, (2) the location (what does "urban" stand for?) and (3) the structural elements (vegetation) (Konijnendijk et al., 2006). The benefits and values of urban greenspace were already described as a combination of ecosystem services and ecosystem functions.

The second aspect that should be defined to determine the scope of urban greenspace is the meaning of "urban". An urban area is generally seen as equal to a city (Grönlund, 2007), or as the opposite of a rural area (Pateman, 2011) However, there has been a lack of scientific consensus on what the term "urban" means (McIntyre et al., 2000). "Urbanity" can be defined both quantitatively and qualitatively. For example, Statistics Netherlands defines an urban area as an area of 1 km^2 that consists of more than 1,000 addresses (CBS, 2020). Besides, urban areas can also be defined qualitatively by addressing their physical, cultural, and socioeconomic characteristics (McIntyre et al., 2000). For example, urban areas are human-dominated ecosystems created specifically for dwelling, characterized by networks of unnatural, built-up infrastructure (Sanders, 1984; Williams et al., 2009; Steams & Montag, 1974). Also, urban areas are often seen as places for social interaction (Batty, 2013; Bettencourt, 2013; Jacobs, 1969). This research will combine the different views on the meaning of urbanity by defining an urban area as a human-dominated ecosystem created especially for dwelling with a high population density (>1,000 addresses/km^2), characterized by networks of built-up infrastructure and social interaction.

The third and final aspect needed to define urban greenspace is the nature that the greenspaces exist of, which are called the "structural elements" (Konijnendijk et al., 2006). The public urban environment consists of "open space", which are undeveloped pieces of land, that are accessible to the public (EPA, 2020). Open space consists of both public space and green space, where public spaces are "hard" spaces such as squares, street frontages, and paved areas (Swanwick et al., 2003). On the other hand, greenspace is generally considered to be unsealed land with some form of vegetation (Hunter & Luck, 2015). Greenspace refers to the overarching concept of nature, such as bodies of water or areas of vegetation in a landscape (Taylor & Hochuli, 2017). Other examples of greenspace are gardens, nature reserves, and river banks (Taylor & Hochuli, 2017). Vegetation consists of both individual elements such as single trees, as well as larger entities, like parks or forests (Konijnendijk et al., 2006). The entirety of greenspaces in an urban area create natural networks of ecological systems at all spatial scales, often referred to as "urban green infrastructure" (Sandström, 2002; Spatari et al., 2011; Cameron et al., 2012). This term emphasizes the importance of interconnections between different urban greenspaces, as biodiversity conservation depends on habitat interconnectivity (Tzoulas et al., 2007). According to Haase et al. (2019), urban greenspace can be divided into three categories: private urban greenspace, public urban greenspace, and

semi-public urban greenspace. Public urban greenspaces are defined as greenspaces that are owned by the local government and that are accessible to the general public, such as parks and urban forests (Fan et al., 2017). Semi-public urban greenspaces are privately owned, for example by an association, but are accessible to the public, such as urban allotment gardens (Haase et al., 2019). Finally, private urban greenspaces are privately owned land, such as backyards, and the owner(s) can, thus, make independent decisions on how to manage the greenspace (Jenks & Jones, 2010). Therefore, this research will solely focus on public and semi-public urban greenspaces, as these are the places that are open to the public and where citizens will mainly be able to collectively work on greenspace realization or preservation projects.

2.3 The history of urban greenspace management

To explore how CIs have changed the context of UGM, it is important to look into the history of UGM in the Netherlands. Since the early 18th century, urban greenspace was used in architecture as an ornamental tool, to create pleasant and beautiful towns (Van Leeuwen et al., 2010). In modern society, UGM has often been incorporated in urban planning and design, especially in developed countries (Hansen et al., 2015), as it offers crucial environmental benefits, while it also benefits the lives of urban dwellers.

Public authorities such as (local) governments have traditionally been in charge of managing urban greenspaces (Molin & Konijnendijk van den Bosch, 2014). However, criticism was raised against greenspace managers' focus on quantities of urban greenspace, and their lack of attention for the quality of the greenspaces (Pauleit et al., 2003). Since the 1980s, there has been a reorientation towards quality in the management of urban greenspaces in Europe, both in theory and practice, in contrast to the former reliance on quantity in urban greenspace provisions (Lindholst et al., 2015). Currently, the types of urban greenspaces and their purposes have become much more varied than solely urban parks. For example, the uses of contemporary urban greenspaces range from leisure and recreation to health and ecology.

Another shift that started to emerge in the 1980s was "the transition from government to governance" (Eliassen & van Vliet, 1993): civil society and market parties became increasingly involved in UGM in western countries (Wittmayer et al., 2017. For this research, "governance" refers to the interactions between multiple public and private actors and civil society to bundle resources and achieve collective greenspace goals (Kooiman, 2003). Coordinated interaction between various stakeholders, including urban planners, ecologists, local greenspace managers, and community groups is essential while working together to manage urban greenspace (Aronson et al., 2017).

In short, UGM has transitioned from a public task focused on quantity, to a public task focused on both quantity and quality of urban greenspace, to, finally, a shared task amongst public, private, and civil society actors. In the next section, the specific role of civil society in UGM will be explored.

2.4 The role of citizen initiatives in urban greenspace management

Since the 1980s, civil society has become part of the wider governance context of UGM in western countries. The new forms of "governance-beyond-the state" have emerged out of the transformation from the welfare state towards the "participation society" (Rosol, 2010). In the Netherlands, after the economic crisis of 2008, the emerging discourse on changing responsibilities between government and citizens intensified (Wittmayer et al., 2017). In a participation society, it is expected that citizens will set up initiatives for their direct environment individually and collectively (Dijkshoorn-Dekker et al., 2013). This type of "active citizenship" has been promoted by researchers and planners for governing the complexity of contemporary problems, such as sustainability issues in urban areas. Citizen initiatives are often seen as beneficial in solving complex problems because, frequently, they are concerned with the issue or have a potential role in the solution of these problems (Aalbers, 2018).

The engagement of citizens with urban greenspace is often motivated by a combination of environmental and social objectives, rooted in environmental stewardship that goes beyond personal benefit (Krasny & Tidball, 2012). The term environmental stewardship is used to describe the diverse actions that individuals, groups, or networks of actors take to protect, care for, or responsibly use the environment (Bennett et al., 2018). According to De Boer et al. (2014), approximately 11% of Dutch citizens is actively involved in using and protecting nature. This ranges from simple actions, such as hanging up a bird nest box in their garden, to more intensive involvement such as being part of a green citizen initiative. This research will focus on the latter form of active citizenship for urban greenspace: GCIs.

Various terms have been used as alternatives for GCIs, such as urban gardening (e.g. Poulsen et al., 2014), urban agriculture (e.g. Lohrberg et al., 2016), community gardening (e.g. Kurtz, 2001), and place-keeping (Dempsey et al., 2014). This research will use the term "green citizen initiatives" to refer to a group of citizens that initiate a project to take action to manage (i.e. realize and/or preserve) urban greenspaces. An important characteristic of GCIs is that the citizens themselves have control over their aims and activities (Igalla et al., 2019). Citizens are the "project owner" of their own initiative (Oude Vrielink & Van de Wijdeven, 2007). Therefore, a GCI that has been initiated by, for example, a local government, is still considered a CI, as long as the members themselves coordinate their own goals and activities to reach these goals.

GCIs often develop a type of urban greenspace that is different from greenspace created by public actors. For example, local governments tend to develop types of urban greenery that are rather uniform in shape and use, and where little free human interaction with nature is possible (Aalbers & Sehested, 2018). This limited shaping of urban nature is often referred to in the literature as "parkification" (Littke, 2015). GCIs tend to develop a kind of urban greenspace that is different in scale and identity (Aalbers & Sehested, 2018). These greenspaces often give the perception of being a bit more "messy" because of different maintenance regimes than the local government. Also, they generally respond to the wishes of locally involved residents, and the greenspaces can often be developed at low cost (Aalbers & Sehested, 2018). Many studies illustrated the contrariety between the wishes of (local) governments and CIs regarding the design, management, and use of urban greenspaces

(Aalbers & Bezemer, 2005; De Ruiter & Aalbers, 2005; Aalbers et al., 2006). Therefore, a large advantage of GCIs is that the greenspace will have enhanced quality and value in the eyes of the involved citizens (Jones et al., 2016). These citizens are often the local residents that will actually use and enjoy the greenspaces. Other advantages of the involvement of GCIs are the contribution to ecosystem functions and services through greenspace creation and maintenance (Colding et al., 2013). Also, GCIs could lead to strengthened social cohesion (Veen, 2015; Van Dam, 2016), a more integrative interaction between society and nature (Aalbers et al., 2015), an increased capacity of citizens to organize themselves (Dempsey et al., 2014), and, finally, innovations in public spaces shape and use (Alm et al., 2002; Schmidt et al., 2018).

On the other side, GCIs often face many challenges. As previously mentioned, GCIs face issues of representativeness (Molin & Konijnendijk van den Bosch, 2014), low participation numbers, a lack of resources, organizational capacity, and power (Igalla et al., 2019), and a lack of skills and knowledge to manage greenspaces (Ghose & Pettygrove, 2014). Also, citizen initiators sometimes tend to draw away from taking care of greenspaces in the long term (Aalbers et al., 2002). Because of these obstacles, the efforts of GCIs are often assisted by the local government, nonprofit organizations, or local companies (Buijs et al., 2019). The types of support for GCIs by these professional actors will be discussed in the next paragraph.

2.5 Support for green citizen initiatives and corresponding actor roles

As previously mentioned, citizen involvement in UGM presumes a shift of responsibilities away from, governments, organizations, and businesses, towards citizens (Mees et al., 2019). This increased "responsibilization" of citizens - the transferred risk and responsibilities to citizens - (Klein et al., 2017) has implications for the roles of these professional actors. Their roles do not necessarily decline or become outdated, but they shift from regulating and steering roles towards more enabling and facilitating roles (Aylett, 2013; Gilbert, 2005). Professional actors in the Netherlands are trying to adapt to their new roles, but are still frequently uncertain about how to facilitate and stimulate CIs. This lack of knowledge could lead to the "frustration" of CIs rather than facilitation (Nederhand et al., 2014; Wamsler, 2016). For example, supporting actors often try to "stay in control" and focus on formal procedures while supporting CIs (Castell, 2016). This may be an obstacle for a flexible supportive approach towards GCIs. Another issue is that GCIs mostly depend on funding from other actors. In order to receive this funding, the activities that GCIs carry out often have to align with the goals of local policies formulated by the Municipality council (Nederhand et al., 2014). Therefore, local governments can hold on to their former steering and regulating roles by determining whether CIs will or will not receive funding.

A few general typologies of interaction with CIs already exist. For example, Bulkely and Kern (2006) categorize possible attitudes for actors dealing with CIs as "By authority", "By provision", and "By enabling". Van Buuren (2017) uses the typology of "Realising", "Cooperating", and "Inviting". Besides, the Dutch Council of Public Administration uses a "government participation ladder", with five types of attitudes towards CIs, as visualized in Table 1 (ROB, 2012). Previously, the Dutch government used a "citizen participation ladder", based on Arnstein's ladder of citizen participation (Arnstein, 1969). However, this ladder assumed that the government initiates actions to reach a certain goal, and chooses to which extent citizens can participate. But in the context of CIs, it often works the other way round: citizens want to reach a goal and initiate a project. Subsequently, the government needs to choose how they want to relate themselves towards these citizens (ROB, 2012). The new government participation ladder of Table 1 was specifically created by the Dutch government to fit within this new context of CIs.

Attitude of the professional actor	Description
Letting go	The actor does not interfere at all with the CI
Facilitating	*The actor enables and helps by engaging in activities that were initiated by citizens themselves to reach specific goals of their own*
Stimulating	*The actor looks for possibilities to encourage citizens to act for a certain purpose or goal*
Steering	The actor is in charge of reaching a certain goal, but other parties, such as citizens, might be included in this process as well.
Regulating	The actor tries to reach a certain goal by itself. There is a vertical relationship between the actor and citizens.

Table 1: The ladder of professional actor participation: five attitudes that local governments, nonprofit organizations & local companies can take while dealing with CIs. Based on ROB (2012). Source: Author.

This study will use the government participation ladder and apply it to the three types of professional actors that might support GCIs: the local government, nonprofit organizations & local companies. The ladder will be used to analyze to what extent and in which ways the professional actors practice the "stimulating" and "facilitating" attitude towards GCIs. Often, GCIs do not spontaneously "arise" (Hurenkamp & Tonkens, 2011). Therefore, *stimulation* by professional actors is often desired to encourage and boost citizen action. However, after the GCIs are initiated, they might still profit from the support and engagement of professional actors in the form of *facilitation*.

Facilitators and stimulators of GCIs can use a variety of actions to support the projects of GCIs or to mobilize citizens to participate in GCIs (Bakker et al., 2012). Therefore, this research will subsequently use a second typology to distinguish different types of stimulation and facilitation, also called "roles". Oude Vrielink & Van de Wijdeven (2007) developed a typology of 10 roles that professional actors often take while facilitating and stimulating CIs (Table 2). This typology was chosen as it is a thorough enumeration of types of support, based on a large number of interviews with members of citizen initiatives and actors that support CIs in the Netherlands. One role was added to this typology, namely "the financer", as financial support is a type of facilitation that is frequently mentioned as an important type of support in other researches (e.g. Fonchingong 2005; Korosec and Berman 2006; Llano-Arias 2015; Igalla et al., 2019), but is missing in the typology of Oude Vrielink & Van de Wijdeven (2007). Below, the meaning of the 11 roles will be explained.

Inside the projects (facilitation)	Outside the projects (stimulation)
The guide	The marketing & communication manager
The mirror	The critic
The supporter	The listening ear
The assessor	The network builder
The translator	The spotlight
The financer	

Table 2: The typology of roles for actors that stimulate or facilitate CIs. Source: Oude Vrielink & Van de Wijdeven (2007).

The guide
The guide is a role that an actor plays when they inform CIs about which organization they can contact for certain information or other types of help. The guide 'leads the way' by referring them to the right organization.

The mirror
If an actor discusses with a CI about the feasibility of a project, the budget, or other aspects in the start-up phase of a project, they act as a "mirror". The actors do not only think along with the member(s) of the CI by asking open questions, they also create the opportunity for the CI members to "hold up a mirror" for their own ideas by answering questions.
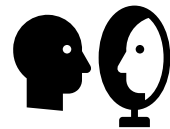
The supporter
The supporter is a role that an actor plays when they are personally involved with the (members of) CIs. For example, the actor can give personal attention to a CI by asking how a certain activity went, or by being present on-site at activities of CIs. The role of supporter is mainly about the feeling of confidence: the idea that someone is there for them to help.

The assessor
The actor plays the role of assessor if he/she checks if the project of a CI is feasible, based on if it meets certain requirements.

The translator
The translator role entails the translation of professional language, such as policy jargon, towards understandable language for citizens. This role is also about translating in a figurative sense, by translating official logic to the logic of citizens.

The spotlight
If an actor shows appreciation for the efforts of the CI, for example through arranging publicity, they "shine the spotlight" on the CI. The spotlight is an important role to increase citizens' self-esteem and increase their willingness to act again.

The financer
If an actor gives financial support to a CI, for example through donations, grants, or loans, they perform the role of "financer".

The marketing & communication manager
This role involves creating publicity for the ability to start a CI, for example through online marketing, posters, flyers, or press releases.

The critic
If an actor asks critical questions about the institutional logic in and around the neighborhood (e.g. Municipal services, neighborhood organizations) they perform the role of "the critic". For example, they could ask questions like "why do things happen like they currently do?", and "could that happen more efficiently, faster, or differently?".

The listening ear
If an actor invests time and energy in conversations with citizens that are not necessarily related to a GCI project, they perform the role of "the listening ear". For example, citizens can contact this actor to share their stories or complaints about certain aspects of the neighborhood.

The network builder
Network builders are professional actors that either connect citizens to each other in a personal way or link projects, organizations, and CIs to each other in an instrumental way.
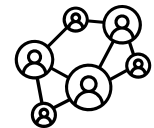
By performing one or multiple of the above-mentioned roles, professional actors can influence multiple factors that increase the likelihood of civic engagement in UGM (Bakker et al., 2012), or factors that improve the success of actions by CIs. Analyzing if and to what extent the support roles are taken by professional actors will give insight into the contemporary forms of support that GCIs receive.

2.6 A diagnostic tool for stimulation and facilitation of green citizen initiatives

This chapter will explore how (combinations of) support roles can be used to *stimulate* and *facilitate* GCIs. *Stimulation* of GCIs relates to the efforts of actors to increase the engagement of citizens in societal action (ROB, 2012). *Facilitation* of GCIs refers to the efforts required by professional actors to help and enhance CIs that already exist. Hence, stimulation takes place before the initiation of a GCI, while facilitation takes place when the initiative has already been established. Facilitation and stimulation are the two main attitudes that a professional actor can take while supporting a GCI. The three other types of attitudes towards a GCI (letting go, steering, or regulating, as visualized in Table 1) are different types of attitudes that a professional actor can take towards a GCI, but are not necessarily related to the *support* of GCIs. This is why this research will focus on stimulation and facilitation of GCIs.

Table 3 shows a typology of four types of support of CIs, based on Oude Vrielink & Van de Wijdeven (2011). The 11 support roles are classified into two categories: roles related to contact with members/initiators of a GCI (facilitation) and roles related to creating a suitable environment for GCIs (stimulation). This classification is combined with a second subdivision, namely the distinction between an instrumental and a personal support approach. The instrumental approach is the most commonly used type of support, that aims for results from the idea that citizens help to realize societal goals with their initiatives. Instrumental support often takes place within established frameworks and rules from the work field of supporting actors (Oude Vrielink & Van de Wijdeven, 2011). On the other hand, a personal support approach is needed as a supplement to the instrumental approach, to appreciate and acknowledge citizens and thereby make them realize that they can make a difference in their neighborhood (Van Stokkom & Toenders, 2010). This increases the self-confidence of citizens, which can motivate them to take action again in the form of CIs (Boluijt, 2009). This classification of facilitation versus stimulation and the instrumental approach versus the personal approach results in four types of support of GCIs with corresponding roles, which are visualized in Table 3, and further discussed below.

	Instrumental approach	**Personal approach**
Role in contact with initiators (facilitation)	*Supplement civil power* - The assessor - The guide - The translator - The financer	*Empowerment of initiators* - The mirror - The supporter
Role in contact with environment: institutions/neighborhood (stimulation)	*Connecting institutionally* - The marketing & communication manager - The network builder - The critic	*Vitalizing the community* - The spotlight - The network builder - The listening ear

Table 3: The typology of support of (green) citizen initiatives. Based on Oude Vrielink & Van de Wijdeven (2011). Source: Author.

Supplement civil power

The first type of facilitation in an instrumental manner is "supplementing civil power". This means that professional actors complement or slightly adjust certain actions of GCIs in the right direction, without explicitly taking over the project (Oude Vrielink & Van de Wijdeven, 2011). Four supporting roles can be used to supplement civil power by professional actors: the assessor (by monitoring the objectives through testing the actions of GCIs against procedural criteria); the guide (by sending citizens into the right direction by bringing them in contact with the right organization); the translator (by translating difficult professional language or logic to understandable language for citizens); and the financer (by subsidizing the activities of GCIs so that they can reach their societal objectives)

Empowerment of initiators

The second type of facilitation in a personal manner is the "empowerment of initiators". This signifies that the supporting actors focus on personal growth of the members of initiatives. Two roles correspond with the empowerment of initiators: the mirror (by making citizens aware of their ideas and the feasibility of their initiatives through personal conversations); and the supporter (by showing personal involvement with the GCI to give the initiators extra confidence in their projects).

Connecting institutionally

Next to facilitation of existing GCIs, another important type of support for GCIs is to create a suitable environment for the initiation of such initiatives through stimulation. GCIs can be stimulated instrumentally by creating "a fertile institutional infrastructure in and around the neighborhood" (Oude Vrielink & Van de Wijdeven, 2011, p.447). This type of stimulation is called "connecting institutionally" and it revolves around three support roles: the marketing & communication manager (by making sure that there is publicity and promotion for the ability to start a GCI); the network builder (by creating connections between people and organizations in and around the neighborhoods); and the critic (by questioning the institutional logic of other organizations or supporting actors if they are hesitant or reluctant to support GCIs).

Vitalizing the community

Finally, GCIs can be stimulated in a personal manner by "vitalizing the community", i.e. improving the sense of social cohesion and connectedness in the neighborhood. Three roles can be played by professional actors to vitalize communities: the spotlight (by arranging publicity for GCIs and thereby stimulating other citizens to start their own initiatives); the network builder (by creating connections between citizens, which improves the chances that they start an initiative together); and the listening ear (by listening to citizens about problems in the neighborhood and encouraging them to start an initiative to improve the situation).

GCIs benefit from a balance between instrumental and personal support (Oude Vrielink & Van de Wijdeven, 2011). The above-mentioned typology of support can be used to identify to which amount professional actors take instrumental and personal support approaches, and if these approaches are in balance.

2.7 Conceptual model

This chapter discussed the relevant theories and concepts related to UGM and the support of GCIs. Based on this theoretical framework, a conceptual model that illustrates the links between the different concepts has been established (Figure 4).
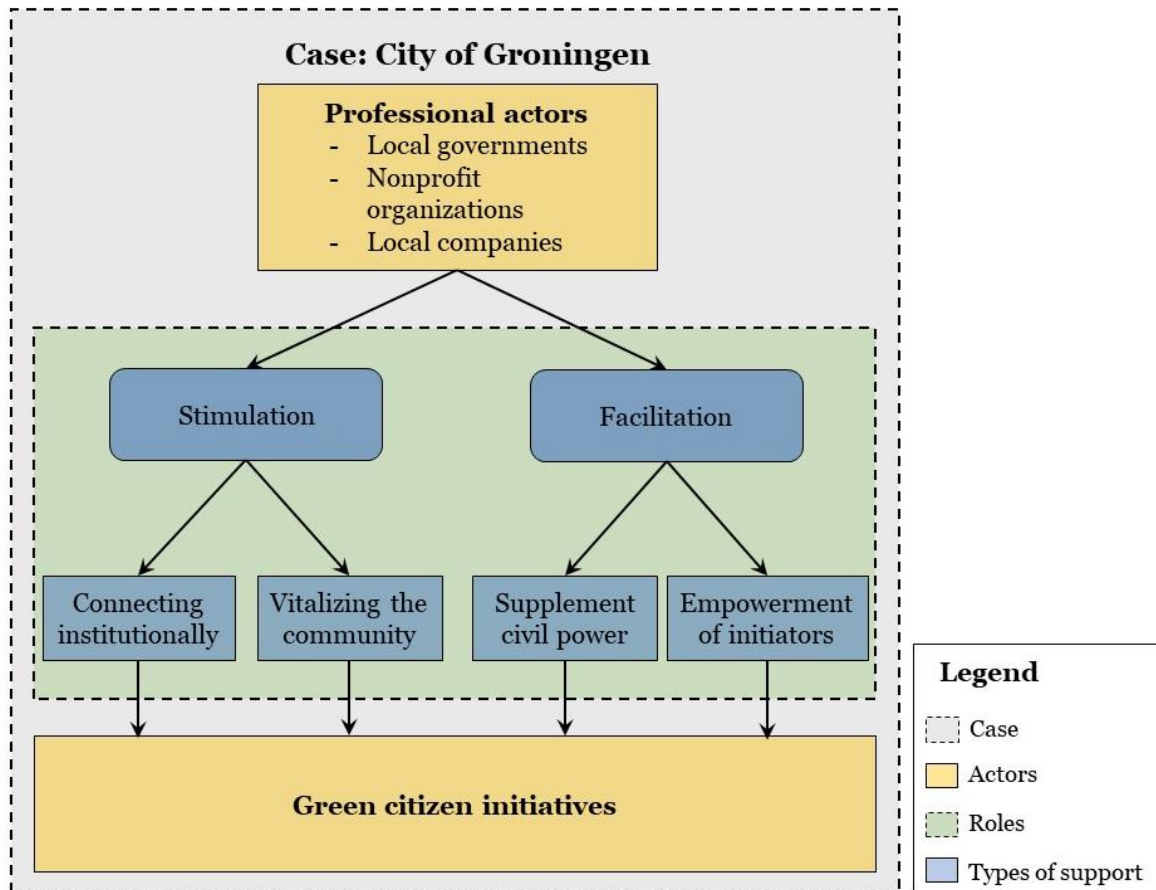
Figure 4: Conceptual model that visualizes how GCIs are expected to be supported by professional actors. Source: Author.

The conceptual model shows the two types of actors that this research focuses on: professional actors and GCIs. Professional actors can support GCIs in two different ways: through stimulation and facilitation. When professional actors take specific actions to support GCIs, they do so by playing one or multiple of the 11 roles. These roles each belong to one of the four categories as visualized in Table 3. Professional actors are expected to stimulate GCIs through "connecting institutionally" and "vitalizing the community" and to facilitate GCIs through "supplementing civil power" and the "empowerment of initiators". Ideally, there is a balance between instrumental and personal support approaches. However, in general, professional actors mainly focus on instrumental support approaches (Oude Vrielink & Van de Wijdeven, 2011), which is why it is expected that the professional actors mainly focus on "connecting institutionally" and "supplementing civil power".

3. Methodology

In the previous chapter, the most important theories and concepts relevant to this study were discussed and synthesized in a conceptual model. This chapter will describe the research methodology and corresponding research design.

3.1 Case study as a research methodology

First of all, this research used a case study methodology, which is an empirical research method that investigates a contemporary phenomenon (the "case") within its real-life context (Yin, 2018). This method makes it possible to do an in-depth study on a particular social unit (Kothari, 2004), which are in this case the four types of UGM actors in Groningen. Also, case study research is suitable for studying a set of contemporary events and it can document particular situations or events in detail (Leavy, 2014). Case study research relies on multiple sources of evidence, also referred to as "triangulation" (Yin, 2018). This research used triangulation by combining qualitative and quantitative sources of evidence, also called "mixed methods". This is a useful strategy because by using both qualitative and quantitative methods, you can draw from both their strengths and minimize their weaknesses (Johnson & Onwuegbuzie, 2004). Because of these benefits, case study research is very suitable for describing the interactions and roles of actors involved with urban greenspace in Groningen.

This research used a single-case study research method, as the single case of the city of Groningen was studied. A common concern about (single-)case studies is that one cannot generalize from one single case and, therefore, it cannot contribute to scientific development (Flyvbjerg, 2006). However, "the force of example" is often underestimated. Case studies can be used for testing hypotheses of theories (Greenstein & Polsby, 1975), which will be done in this research, to test if the theory of support of Oude Vrielink & Van de Wijdeven can be applied to the city of Groningen.

Yin (2018) categorizes four main types of case study designs: single-case study, embedded single-case study, multiple-case study, and embedded multiple-case study. This research used a single-case study research method with embedded elements as the case contains four units of analysis, which are the four main actors that were studied: GCIs, local government, nonprofit organizations & local companies (Figure 5). The research design includes the analysis of the contextual conditions concerning the case: the city of Groningen.
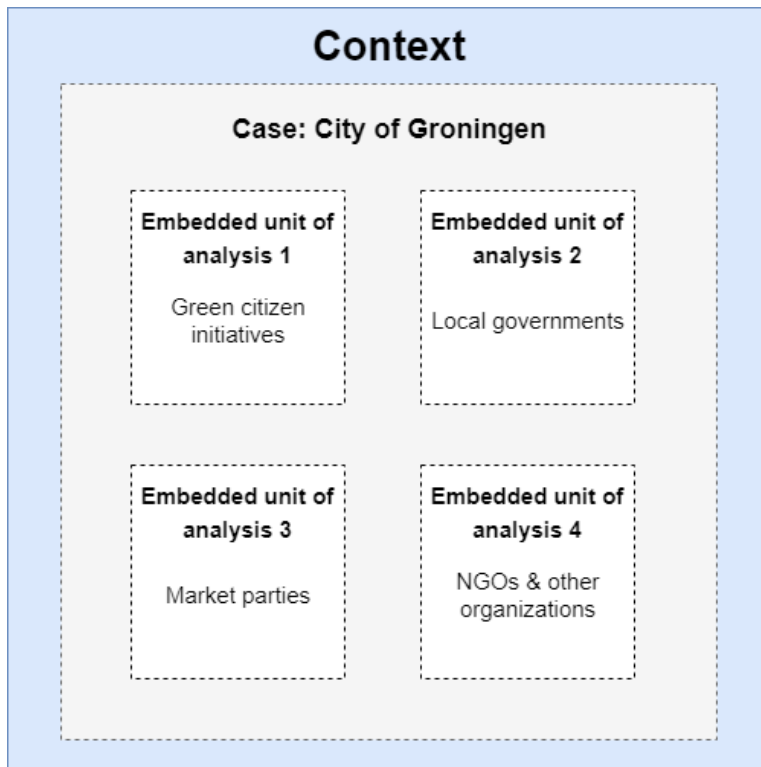
Figure 5: Visualization of the type of research: single-case embedded design. Based on Yin (2018). Source: Author.

To conduct a case study, it is important to create a well-structured research design that explains the steps that need to be taken to link the data to be collected and the conclusions to be drawn to the research questions (Rowley, 2002). According to Yin (2018), five aspects are especially important for creating a well-structured case study research design, namely:

1. A case study's research questions;
2. Its propositions;
3. Its case/unit of analysis;
4. The logic of linking the data to the propositions; and
5. The criteria for interpreting the findings.

The research questions and their theoretical propositions were discussed in Chapters 1 and 2. The rest of this chapter will discuss the final three aspects important for creating a case study research design.

3.2 The case of Groningen

To define the unit of analysis, two different steps need to be taken: defining the case and bounding the case (Yin, 2018). A "case" is an event or entity (Yin, 2018), which is in this situation the city of Groningen. The case has defined boundaries that the researcher should "fence in" (Merriam, 1998) by defining the spatial boundary, the theoretical scope, and the time boundary (Yin, 2018).

First of all, the spatial boundary of this case study is the city of Groningen, which is the area outlined by black borders in Figure 6. This research focuses on all public and semi-public urban greenspaces, as defined in the theoretical framework in Chapter 2, within the area of the city of Groningen. Examples of these greenspaces are large parks like the Noorderplantsoen and Stadspark, but also smaller urban greenspaces, like patches of street vegetation. Both large and small patches of urban greenspace are part of the wider urban green infrastructure network, that contributes to both ecological processes and human well-being (Borgström et al. 2006). Therefore, this research will include all varieties of scale of urban nature in Groningen, as well as greenspaces that are too small to be visible on land use maps.

Figure 6: Spatial boundary of the case: The city of Groningen. Source: Esri Nederland, 2020.

Third, it is important to define the time boundary of the case study, to define the beginning and end of the case (Yin, 2018). This research was conducted between May 2020 and January 2021. Data has been collected in November 2020. Therefore, the results of this research are based on the perceptions of respondents during this specific period.

3.3 Data collection methods

As a fourth step for creating a research design, it is necessary to decide what data is needed to support or disprove the research propositions (Yin, 2018). Three concepts are important for the quality of a case study's research design: construct validity, external validity, and reliability (Rowley, 2002).

First of all, construct validity means identifying the correct operational measures for the concepts being studied (Yin, 2018). To reach construct validity, multiple sources of evidence were used, also referred to as "triangulation" (Yin, 2018). The data collection methods that have been used are literature research; policy document analysis; questionnaires; and in-depth interviews. Table 4 shows which research methods were used to answer each of the secondary research questions.

Secondary research question	Research method
How does the emergence of citizen initiatives change the context of urban greenspace management?	Literature research
Which roles can public authorities, nonprofit organizations, and local businesses take in stimulating and facilitating green citizen initiatives?	Literature research
Which actors are involved in urban greenspace management in Groningen and how do they interact with each other?	Questionnaires (SNA); in-depth interviews
Which roles do the local government, nonprofit organizations, and local companies currently play while stimulating and facilitating green citizen initiatives in Groningen?	Policy analysis; in-depth interviews
Which challenges do green citizen initiatives in the city of Groningen encounter?	In-depth interviews

Table 4: Secondary research questions and corresponding research methods. Source: Author.

Second, external validity is about identifying whether and to which domain the research findings can be generalized (Rowley, 2002). Therefore, the single case study was embedded in a theoretical framework (Chapter 2). Finally, reliability means that the researcher can demonstrate that the operations of the study - such as the data collection - can be repeated and produce the same results (Rowley, 2002). This research has carefully aimed to produce reliability by documenting the proceedings and raw data of the research in a case study database. (Brown, 2008). The digital case study database of this research stores all the collected data of the literature research, interviews, questionnaire, and policy document analysis.

3.3.1 Literature research

The literature review of this research provides a description and synthesis of literature related to urbanization, urban greenspace, and actors involved with UGM, with a particular focus on GCIs and actors that support these initiatives. Literature research provided an overview of explored theories and concepts, and it demonstrated how this particular research fits within the larger field of study (Fink, 2019). The research objectives and questions were formulated using the insights from the literature research, by identifying knowledge gaps in the literature on the particular topic (Fink, 2019). The sources of the literature review are - both Dutch and

English - scientific articles, scientific books, policy documents, and miscellaneous informative websites. Main keywords used to find relevant sources were "urbanization", "urban greenspace", "benefits", "urban greenspace management", "citizen initiatives", "roles", "governance", "facilitation", "stimulation", "support", or a combination of these keywords. The sources were selected if they contained information about UGM and/or the support of GCIs. The researcher also mainly tried to select recent sources (publication date after 2000), to use up-to-date information. However, for the explanation of more general concepts, such as "governance", older sources were accepted as well. All sources have been referenced to provide transparency and avoid plagiarism.

3.3.2 Policy document review

Formal and informal rules by the local government - in this case the Municipality of Groningen – are an important condition for stimulation and facilitation of CIs (Bakker et al., 2012). For example, laws and statutes set by the local government could limit the abilities of CIs. On the other side, policy goals that aim to increase citizen action for urban greenspace through support could improve the abilities of CIs to perform certain tasks and reach their goals. Therefore, a document review of policies from the Municipality of Groningen about urban greenspace and GCIs has been done. Three Municipality policy documents were found on the Municipality website and identified as relevant documents related to GCIs:

1. Groene Pepers (Gemeente Groningen, 2009)
2. Groenparticipatie Beleidsnota (Gemeente Groningen, 2010)
3. Groenplan Vitamine G (Gemeente Groningen, 2020)

The documents were read and notes were taken about the most important requirements, procedures, goals, and visions related to GCIs. Afterward, these notes were used to produce a summary of the most important findings of the policy analysis. The policy document review mainly focuses on the discourse regarding why and how GCIs are supported. This provides insights into how the local government aims to stimulate and facilitate GCIs.

3.3.3. Questionnaires for Social Network Analysis

The third type of data collection method was a quantitative research method: a questionnaire. The questionnaire has been created and spread using the online survey software tool "Qualtrics". The choice for an online questionnaire was made because this creates the possibility to easily share the questionnaire amongst a large number of respondents and to efficiently transfer the data into a file for analysis. The questionnaire was spread amongst individual members/volunteers/employees of the four embedded units of analysis of this research. The link to the questionnaire has been sent by email to all identified actors of these four units of analysis in Groningen. The first actors have been identified through online searching on by using keywords such as "green citizen initiative Groningen", "urban nature Groningen", "green Groningen", "support green citizen initiatives" (in Dutch). Also, GCIs were identified by searching on inventory websites such as "Ideeënbank Groningen" (Ideeënbank, 2020), "Eetbaar Groningen" (Eetbaar Groningen, 2020), and "Burgerinitiatieven Groningen" (Burgerinitiatieven Groningen, 2019). Additionally, respondents were identified through "snowball sampling", which is a sampling technique where existing respondents recruit possible future respondents, by forwarding the link to their acquaintances that are also involved with UGM in Groningen.

The questionnaire included questions about the type of organization that the respondent is part of and the interactions that this organization has with other actors. The questions that were included in the questionnaire can be found in Appendix I. The actors and their interactions were mapped by "Social Network Analysis" (SNA). SNA is increasingly acknowledged as an important tool in conservation and sustainable land management, to understand how stakeholders interact, and influence one another (Guenat et al., 2020). By using SNA, a map of the actors within the field of UGM in Groningen has been created. Also, the SNA provided insight into the type and frequency of interactions between these actors. The details about the analysis of the questionnaires through SNA are further explained in Chapter 3.4.1.

3.3.4 Semi-structured in-depth interviews

The final type of data collection method that has been used is a qualitative research method: semi-structured in-depth interviews with members/employees of GCIs, local governments, companies & nonprofit organizations in Groningen. In-depth interviews allowed the researcher to gain insight into the perspective of the interviewees, and understand the experiences, perceptions, and interpretations that they have with (support of) GCIs. This qualitative research method was useful for answering the research question "Which actors are involved in urban greenspace management in Groningen, what are their roles, and how do they interact with each other?", because qualitative methods can be used to understand the social interactions among different actors (Hennink et al., 2011). Also, qualitative research helped with answering the research question "Which challenges do green citizen initiatives in the city of Groningen encounter?", because the answer to this question was found by listening to the opinions and experiences of multiple actors, such as CIs themselves and actors that support those initiatives.

Possible interviewees were identified through online searching as described in Chapter 3.3.3 and through the results of the questionnaire. They were asked to participate by email. Due to the COVID-19 epidemic, interviews were held through online video calls as much as possible, to guarantee the safety of the interviewees and the researcher. Eight of the interviews were held online by video calls with Google Meet (seven times) and WhatsApp videocall (one time). Two of the interviews were held in real life, on locations where it was possible to keep a safe distance from each other.

Ethical considerations have been taken into account by informing the interviewee about the confidentiality of the interview, anonymity of the data, and by asking permission for audio-recording the interview. In the introduction of the interviews, the researcher introduced herself and explained the purpose and objectives of the research. Also, the interviewee was informed about his/her right to not answer certain questions, to terminate the interview, and the possibility to turn off the voice recorder or delete the recording. After the introduction, some general questions about the background of the interviewee were asked, to establish a trust relationship and to gain some basic information on the interviewees. Subsequently, the interview proceeds to the key questions, and, finally, closing questions. The questions were asked in an open and empathic way, to prevent steering answers. Probing questions were asked based on the answers of the interviewees, to dig deeper into the subject and to fully understand the issues that the interviewees were talking about.

The interviews were conducted based on semi-structured interview guides, designed specifically for each "type of actor" that was interviewed (Appendix I). The transcripts of the interviews can be found in Appendix III. In total, ten interviews were held with members or employees of the following embedded units:

Embedded unit 1: green citizen initiatives
- Interview 1: Buurtboomgaard Hoornse Meer, 19-11-2020
- Interview 2: Edible Green Oosterparkwijk, 11-11-2020
- Interview 3: Goudenregenplein and Bewonersorganisatie Oosterparkwijk, 24-11-2020
- Interview 4: TuinInDeStad, 27-11-2020

Embedded unit 2: local government
- Interview 5: Municipality of Groningen, 17-11-2020

Embedded unit 3: nonprofit organizations
- Interview 6: IVN Natuureducatie, 20-11-2020
- Interview 7: Natuur en Milieufederatie Groningen, 12-11-2020
- Interview 8: Stichting Steenbreek Groningen, 20-11-2020

Embedded unit 4: local companies
- Interview 9: Ecohovenier Michiel Coesèl, 29-11-2020
- Interview 10: De Korenbloem, Tuinen met Visie, 30-11-2020

People from all four embedded units were interviewed, to hear multiple opinions and all sides of the story about how GCIs in Groningen are supported and how this could be improved, by both the "supporting actors" and the GCIs themselves. The GCIs were selected to create a variation in "types of GCIs" based on activities, number of participants, location, and how long the initiatives already exist. Nonprofit organizations and local companies were selected through the results of the questionnaire, based on them being indicated often by GCI members as supporting actors.

During the interviews with the supporting actors, a conversation tool was used (Figure 7). This tool was used to identify to what extent the supporting actor recognizes and acknowledges each role, and to analyze in which ways the professional actor supports GCIs, why, and how. The conversation tool is an interactive online image that shows all support 11 roles that professional actors could supposedly play according to Oude Vrielink & Van de Wijdeven (2007). The tool was shown to the interviewee by sharing the contents of the screen of the researcher. Subsequently, a short explanation was given about the meaning of the roles. The interviewee could then indicate if they recognize the role, if they play it, and in which ways. Figure 7 shows examples of how the tool has been used interactively to highlight if certain roles were played (underlining a role), if a connection between certain roles was indicated (arrows), or if noteworthy comments were made (sticky note).

Figure 7: The conversation tool for professional actors about support of GCIs. Based on Oude Vrielink & Van de Wijdeven (2007). Source: Author.

3.4 Data analysis and interpretation

The fifth and final step for creating a research design is to establish the criteria for interpreting the findings (Yin, 2018). A variety of types of data analysis will be used to analyze the findings, which are discussed below.

3.4.1 Quantitative data analysis

The quantitative data obtained through the online questionnaires has been analyzed through Social Network Analysis (SNA). SNA has its roots in sociology, and it depicts the social world as "an intertwined mesh of connections" (Scott, 1988). A social network is an image of social reality that shows how actors (nodes) are connected (ties). This type of stakeholder mapping is useful to visualize the diverse set of actors involved in UGM in Groningen, their ties (who collaborates with whom?), and their patterns of interaction (Ernstson et al., 2008). The data obtained from the online questionnaire about the actors in UGM in Groningen and their interactions has been used to create a "map" that visualizes all different actors (dots) and their interactions (lines). The SNA software "Gephi" has been used to create images of the actor-network of UGM in Groningen.

3.4.2 Qualitative data analysis

The qualitative data of the policy documents and the in-depth semi-structured interviews was analyzed using the qualitative data analysis software "Atlas.ti". First, the data was prepared for analysis by producing verbatim transcripts of the interviews and policy documents, and by removing personal identifiers from the data to preserve the anonymity of the interviewees. After preparing the transcripts, qualitative data analysis comprised the following analytic tasks: developing codes, description & comparison, categorization & conceptualization, and theory development (Hennink et al., 2011).

First, codes are important topics, ideas, issues, or opinions in the interviews, which can be used to identify issues raised in the data or to understand the meanings attached to these issues (Hennink et al., 2011). Some of these codes are deductive codes, which means that they were developed in advance of the interviews based on the literature research. Inductive codes were developed after the interviews, based on the analysis of the qualitative data in the transcripts (Hennink et al., 2011). The codes were given a name and were included in the codebook (Appendix V). The transcripts were analyzed and the data from the transcripts was labeled by applying the codes from the codebook to pieces of text. Also, codes with similar characteristics were categorized by grouping them into two main categories: "support" and "challenges". Categorization was used to develop a conceptual understanding of the issues in the data (Hennink et al., 2011).

The final task in the analytic cycle was to bring all the former tasks together to analyze stimulation and facilitation of GCIs. This step moved beyond description and towards explanation, to gain a broader conceptual understanding of the interactions, roles, and types of support from actors involved with UGM. The support roles and challenges were analyzed quantitatively by counting the number of times that a certain role or challenge was mentioned in each interview. It can generally be assumed that the more an issue was mentioned, the more important this factor is according to the interviewee. All of the interviews lasted approximately 45 minutes, which is why it can be assumed that there is no bias in the number of times that

the interviewees talk about a certain challenge or support role based on the duration of the interviews. Quotes of the interviewees were used to illustrate and clarify the findings.

4. Results & analysis

After discussing the data collection and analysis methods that are part of the case study in Chapter 3, this chapter will subsequently discuss the results of the policy document analysis, the Social Network Analysis, and the qualitative in-depth interviews.

4.1 Urban greenspace and green citizen initiatives related policy in Groningen

As mentioned before, there has been a high degree of attention for urban greenspace in Groningen by the Municipality and other actors in 2020. Although this is a quite recent development, the Municipality of Groningen has incorporated urban greenspace in policies since 2009. This chapter will summarize the position of GCIs in UGM according to the policy documents "Groene Pepers", "Groenparticipatie Beleidsnota" & "Groenplan Vitamine G".

Groene Pepers (Municipality of Groningen, 2009)

- **Publication:** April 2009
- **Duration:** 2009-2020
- **Aim:** Green structure vision to formulate and pursue sustainable green and blue ambitions.

"Groene Pepers" was the first policy document about urban nature by the Municipality of Groningen. The policy document is a framework to connect a large number of existing policy documents, regulations, and agreements related to the living environment.

Groene Pepers was the first Municipality policy document that acknowledged that other actors, like citizens and organizations, want to become (co-)responsible for urban greenspace and will become able to participate in UGM. Groene Pepers "explicitly aims for co-responsibility and participation of citizens in the design and management of public greenspace, especially on the street and neighborhood level" (Municipality of Groningen, 2009, p.5). According to Groene Pepers, the reason for involving citizens in UGM is that it leads to "increased awareness among residents of the importance of a high-quality living environment" (Municipality of Groningen, 2009, p.35). Also, Groene Pepers states that co-responsibility should lead to increased involvement and a sense of responsibility amongst citizens.

Groene Pepers describes that the Municipality wants to facilitate citizens in determining the design and usages of green public space in their own living environment so that the urban greenery optimally meets the wishes of the local residents. The policy document describes that the Municipality will implement the ambition for increased citizen participation by creating a separate "green participation program", in which the conditions will be further worked out. These conditions for green citizen participation were adopted in 2010 in the "Groenparticipatie Beleidsnota", which is explained below.

Groenparticipatie Beleidsnota (Municipality of Groningen, 2010)

- **Date of publication:** 21-10-2010
- **Duration:** 2010 - present
- **Aim:** To explain how citizen participation in UGM is implemented within the Municipality of Groningen.

The "Groenparticipatie Beleidsnota" is a policy paper by the Municipality of Groningen that elaborates on how citizen participation in UGM in Groningen will be implemented. First of all, the paper emphasizes the contribution of GCIs to the quality of the living environment and the amount of social contact between residents. Citizens are "rewarded with increased living quality and a higher utility value of their living environment" (Municipality of Groningen, 2010, p.3). Also, "citizens that engage in urban greenspace management will feel more involved with their neighborhood and fellow residents, and social contacts between residents will be strengthened" (Municipality of Groningen, 2010, p.3).

Second, the policy paper explains that until then (October 2010), the Municipality has not actively supported GCIs. However, the paper states that each year, there are a couple of situations where citizens take the initiative to realize or preserve urban greenspace. The agreements between such GCIs and the Municipality were, until then, established in an "adoption contract". The paper states that the possibilities for such participation projects were limited and that "even though the necessary expertise was available, the capacity for a true support traject was lacking" (Municipality of Groningen, 2010, p.4). Also, there was confusion about who was responsible for the implementation and professional guidance of projects by citizens.

Third, the policy paper states, also based on experiences of other cities in the Netherlands (Zoetermeer, Utrecht & Zwolle), that increased commitment by the Municipality is needed to "stimulate and coordinate" GCIs. This is why in early 2010, a "coordinator green citizen participation" was appointed to handle requests of GCIs, to test if the requests meet the requirements, to coordinate the execution of projects, and to monitor the enforcement of the requirements. Furthermore, the coordinator is the contact person for citizens and the Municipality.

Fourth, the policy paper describes the requirements and procedures for GCI requests. The requirements that GCIs need to meet can be found in Appendix VI. The procedures that a GCI needs to follow to file a request for initiating a GCI can also be found in Appendix VI. The policy paper states that the Municipality tried to formulate the requirements and procedures as understandable and short as possible, because they want to stimulate GCIs in an accessible way.

Finally, the document describes how the Municipality wants to communicate with citizens about the active role that they can play in UGM. For example, in new residential development projects, the Municipality asks citizens if they would like to participate in greenspace maintenance. Also, the no longer existing website "Duurzaamste Stad" (Most Sustainable City) will spread more information on the possibility to start a GCI and the corresponding requirements. Finally, as part of the renewal of the municipal website, more pages about urban greenspace will be added. However, the policy paper acknowledges that word of mouth also

plays an important role in stimulating citizens to become active in a GCI, for example through already executed projects by other GCIs.

Groenplan Vitamine G (Municipality of Groningen, 2020)

- **Date of publication:** 24-06-2020
- **Duration:** 2020-2030
- **Aim:** to give direction to the ambition of the coalition agreement to make the Municipality greener and more climate-proof.

Groenplan Vitamine G is a recently developed action plan by the Municipality of Groningen, that discusses the aims of the Municipality to develop and enhance urban greenspaces, to increase livability, health, climate adaptation, and biodiversity. The "Groenplan" is an update of the former green structure plan by the Municipality "Groene Pepers" (Gemeente Groningen, 2009). One of the policy goals is to expand urban greenspace by adding 1,000 trees to the 130,000 trees already present, and by adding 30,000 m² of urban greenspace annually to the already existing 12.13 km² of urban greenspace, until 2030.

Just like Groene Pepers, Groenplan Vitamine G emphasizes the importance of collaboration between multiple actors, such as citizens and organizations, for UGM. The policy document describes that greenery will be accessible in the sense that the development and maintenance of greenspace will be adapted to the initiatives and ideas of citizens. However, Groenplan Vitamine G states that the importance of greenspace is not yet seen and acknowledged in every neighborhood. Therefore, the Municipality will "focus more on communication and participation, to inform our citizens on why greenery in your direct living environment is important, and to stimulate them to make use of the opportunities" (Municipality of Groningen, 2020, p.16). The Municipality is going to jointly prepare, implement and finance GCIs with her own seven "area teams", that represent the Municipality in a specific part of the city.

Groenplan Vitamine G mentions a large growth in the number of GCIs over the years. For example, through the project "Eetbaar Groningen", 70 GCIs have been launched to grow fruit and vegetables in the neighborhood. Also, via "Stichting Steenbreek", more than 400 facade gardens and over 200 green roofs have been created. A new aim of the Municipality is to give extra attention to neighborhoods where health is lagging behind, as compared to the rest of the city. The Municipality aims to make those neighborhoods greener together with citizens so that it contributes to the healthy aging of residents.

4.2 The social network of urban greenspace actors in Groningen

As discussed in Chapter 4.1, policy documents by the Municipality of Groningen emphasize the importance of collaboration between multiple actors for UGM. Therefore, it is important to map which actors are involved with UGM and how they interact with each other. Social Network Analysis is a useful research method to visualize and understand how stakeholders interact (Guenat et al., 2020). Hence, this chapter will describe how SNA was used to answer the research question **"Which actors are involved in urban greenspace management in Groningen and how do they interact with each other?".** First, this chapter will clarify which actors are involved in UGM in Groningen by showing their position in the Social Network Map (SNM). The number of actors that are involved in UGM is too large to describe the role and interactions of each individual actor. Therefore, Chapter 4.2.1 until 4.2.4 will describe the roles and interactions of a specific selection of GCIs, the local government, nonprofit organizations, and local companies in-depth.

The data for the SNA was gathered with an online questionnaire (Appendix I) that was filled out by 30 respondents. Of these 30 responses, two were deleted due to incomplete responses which made it impossible to identify the name of the actor, or the interactions that the actor had with other actors. The answers of the 28 remaining respondents resulted in a total of 77 discovered actors (nodes) and 146 discovered interactions (edges) between two actors. The data file that the SNA is based on can be found in Appendix II. This data was used to create an SNM, as represented in Figure 8. A larger version of the SNM can be found in Appendix VII.

The SNM was created with the SNA software package "Gephi" and consists of two elements: nodes and edges. The map shows each actor that was discovered through the questionnaire as a node. The interconnections between two actors are shown as a line between two nodes: an edge. Initially, the questionnaire was only sent to members/employees of the four types of actors that this research focuses on. However, through snowballing and the answers of the respondents, other types of actors were also identified as part of the social network of UGM in Groningen. These are: educational institutions; housing corporations; and three remaining actors (a church, a childcare center, and an expertise center for people with a vision impairment).
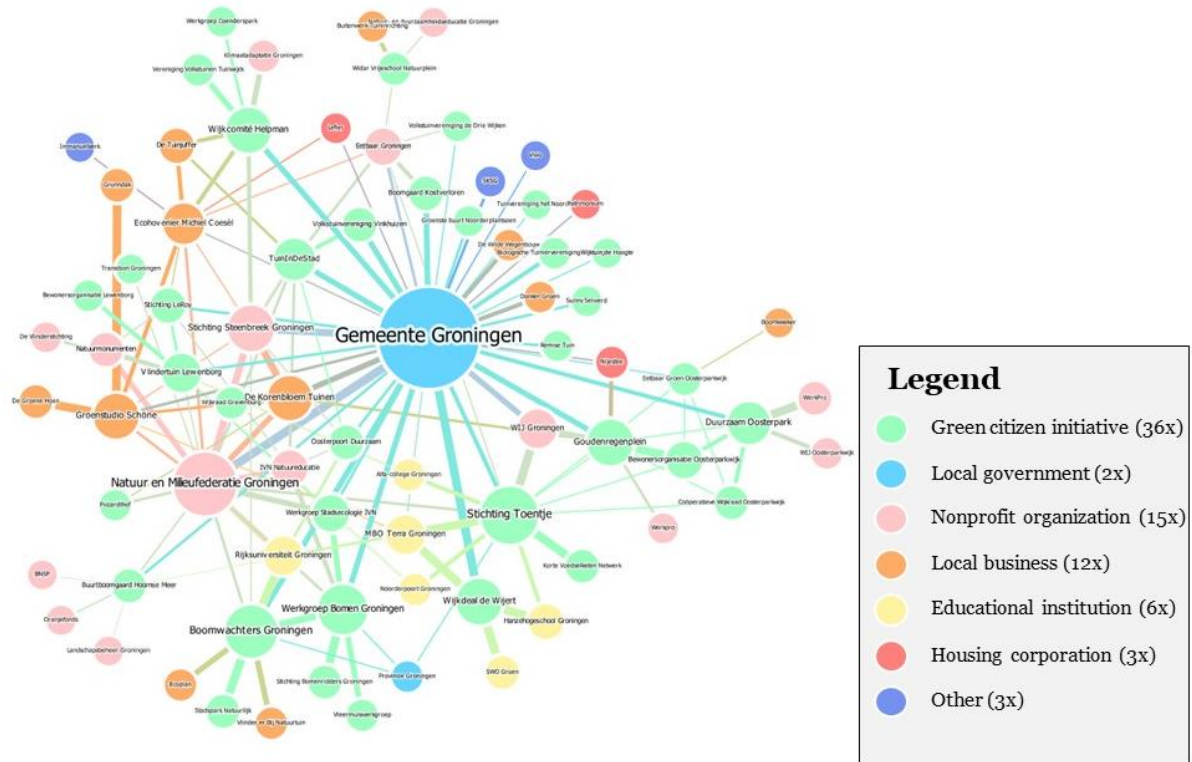
Figure 8: Social Network Map of UGM in Groningen. Source: Author.

Edges have different sizes based on their "weight", which is the regular frequency of interaction between two nodes. Each actor was asked with which other actors they interact, and how frequently. The average frequency of interaction is linked to a specific "weight", as described in Table 5.

Frequency of interaction between two actors	Weight
Once a week or more	6
Once in every two weeks	5
Once a month	4
Once in a quarter year	3
Once in half a year	2
Once a year or less	1

Table 5: The weight that was assigned to an edge based on the regular frequency of interaction. Source: Author.

Just like edges, the nodes themselves also have different sizes based on their "weighted degree", which is the sum of the weights (frequency of interactions) that an actor has. For example, an actor that interacts with one other actor weekly and with another actor monthly has a weighted degree of 6 + 4 = 10. Therefore, the size of the nodes in the social network map is based on both the number of interactions, as well as the frequency of those interactions. There is a linear relationship between the weighted degree and the size of the node. The average weighted degree and corresponding node size indicate how "well-connected" an actor is within the network.

As can be seen in the social network map, the Municipality of Groningen is the largest node, which means that the Municipality has the largest weighted degree (200.0), followed by Natuur en Milieufederatie Groningen (96.0) and Stichting Toentje (80.0). This indicates that those three actors are the most well-connected within the social network. Table 6 shows the average weighted degree and the average number of interactions for each type of actor that this research focuses on.

	Local governments	GCIs	Nonprofit organizations	Local companies
Average weighted degree	103	19.58	18.27	16.67
Average degree	6.27	3.53	3.37	2.81

Table 6: The average weighted degree (sum of frequency of interactions) and average degree (number of interactions) of the four analyzed types of actors. Source: Author.

These results show that the local governments (Municipality and Province of Groningen) are on average by far the most well-connected actors, followed by GCIs, nonprofit organizations, and finally local companies.

If we take a closer look at *how* the local government, nonprofit organizations, and local companies interact with GCIs, we can distinguish four types of interactions: (1) the exchange of information; (2) the exchange of materials (e.g. gardening tools); (3) working together on projects; and (4) receiving/giving support (from the professional actor to the GCI). (Kronenberg et al., 2016). The number of times that GCIs interact with the three types of professional actors in those ways are represented in Table 7.

	Exchanging information	Exchanging materials	Working together on projects	Receiving/ giving support	Total amount of interactions
GCIs-local companies	17.65% (3)	11.76% (2)	47.06% (8)	23.53% (4)	17
GCIs-local government	19.15% (9)	14,89% (7)	10.64% (5)	55.32% (26)	47
GCIs-nonprofit organizations	25.54% (15)	10.17% (6)	15.25% (9)	49.15% (29)	59

Table 7: Types of interactions between GCIs, local companies, the local government, and nonprofit organizations. Source: Author.

These results show GCIs mainly interact with nonprofit organizations and the local government. Those interactions are predominantly related to the support that GCIs receive from those actors. However, GCIs also interact with the local government and nonprofit organizations to a lesser extent by exchanging information, working together on projects, and exchanging materials. A smaller number of interactions was found between GCIs and local companies. Also, these interactions are more focused on working together on projects than on receiving support from those companies. To gain more in-depth insight into the interactions, 10 semi-structured interviews were held with members/employees of the four actor types. Chapter 4.2.1 until 4.2.4 will give an introduction to the four GCIs, the local government, the three nonprofit organizations, and two local companies that were researched in-depth through personal interviews. Also, these chapters will explain how those 10 actors interact with other actors.

4.2.1 Green citizen initiatives

The SNA mapped 36 GCIs in the city of Groningen. Four of these GCIs have been selected and researched in-depth through semi-structured interviews. Below, the initiatives will be introduced by discussing their characteristics and their interactions with other actors. Table 8 shows some of the main characteristics of the GCIs that were selected.

Name of GCI	Links	Founded in	Number of initiators /members	Motivations	Activities	Interviewee(s)
Buurtboomgaard Hoornse Meer	Website Facebook page	2011	Core group of 7 persons. Varying amount of volunteers	Connecting citizens to nature; social cohesion; urban farming	Maintenance of the orchard; urban gardening; selling harvest	Early member and part of the core group; contact person for the Municipality
Edible green Oosterparkwijk	-	2019	3	Healthy, nearby, and cheap food production; climate adaptation	Initiation of the idea; development of a project plan; selecting trees	Main initiator of the project
Goudenregenplein	Facebook page	2017	7	Biodiversity; social cohesion; nature education; natural playing; urban gardening.	Urban gardening; organizing social activities	Petra Beekhuizen Khan, early member and lead taker of the initiative; and Jaap de Graaf, secretary of Bewonersorganisatie Oosterparkwijk and member of the Goudenregenplein initiative.
TuinInDeStad	Website Facebook page	2009	Approximately 20-25	Being outside; relaxation	Development and maintenance of the urban greenspace; organizing social activities; generating income with their camping, renting out their building, and selling products	Frans Kerver, co-initiator

Table 8: Main characteristics of the four selected GCIs. Source: Author.

The four GCIs are located in different parts of the city, as shown on the map in Figure 9.
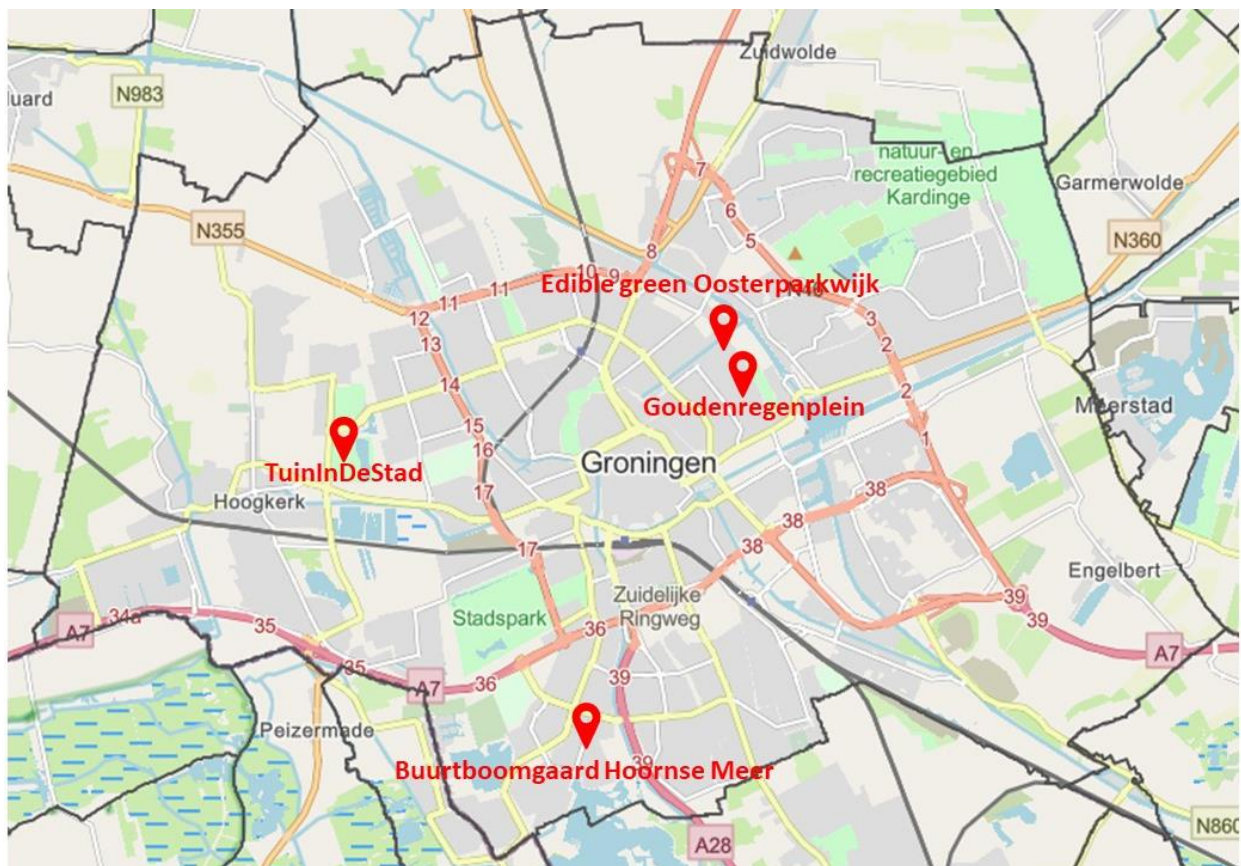
Figure 9: Locations of the four selected GCIs. Source: Author.

Buurtboomgaard Hoornse Meer

Buurtboomgaard Hoornse Meer is a neighborhood orchard located at the Den Uylstraat, in the neighborhood "Hoornse Meer". The orchard contains about 25 fruit trees, 10 nut trees, a square, wooden benches, and a flower meadow (Eetbaar Groningen, 2013).

Figure 10: Neighbors day at the Buurtboomgaard Hoornse Meer. Source: Buurtboomgaard Hoornse Meer (2020).

Figure 11 shows that Buurtboomgaard Hoornse Meer interacts with six other actors. The size of the nodes is based on the amount and frequency of interactions in the full Social Network Map (Figure 8). The Municipality financially supports this GCI and helps with the maintenance of the neighborhood orchard. Second, Natuur en Milieufederatie Groningen advertises this GCI on their website "Eetbaar Groningen" (Eetbaar Groningen, 2013). Further, the GCI received financial support from the foundation "Oranjefonds" for organizing a neighbors day, as represented in Figure 10. Landschapsbeheer Groningen organized green maintenance workshops for members of the GCI. Students from vocational college "MBO Terra Groningen" proposed designs for the neighborhood orchard. Finally, planning association BNSP interviewed the GCI and published it in their magazine.
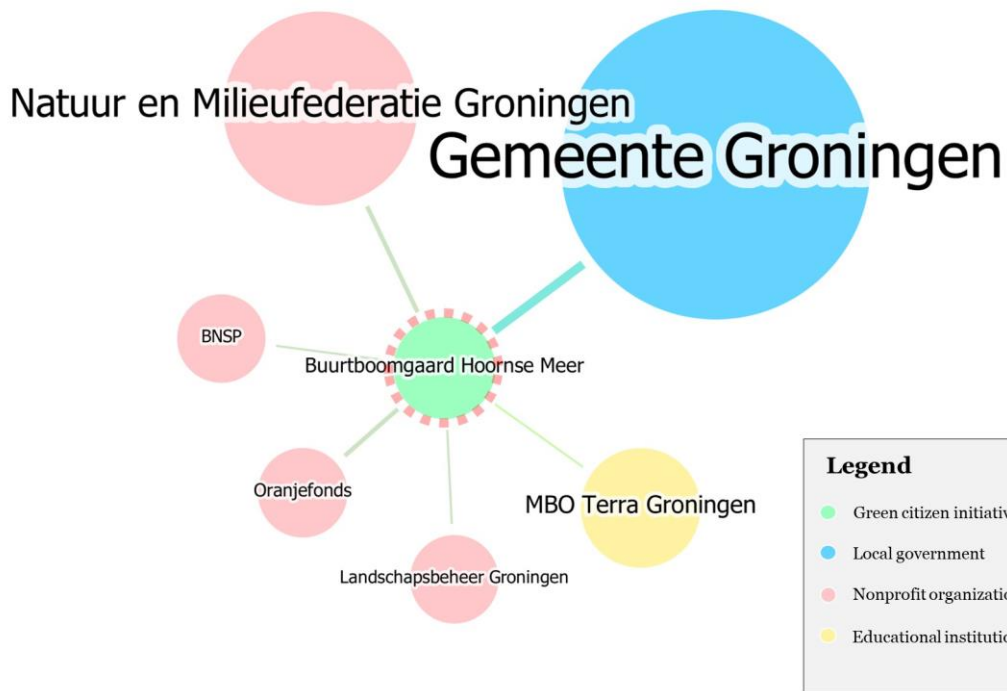
Figure 11: Interactions between GCI "Buurtboomgaard Hoornse Meer" and other actors. Source: Author.

Edible green Oosterparkwijk

The GCI for edible green in the Oosterparkwijk is a special one because the initiative competed in a competition in 2019 called "De Stem van Groningen" (Stem van Groningen, 2019). This contest was coordinated by the Coöperatieve Wijkraad Oosterparkwijk, where citizens could submit an idea and corresponding action plan for their neighborhood on a website. The interviewee submitted the idea of planting 10 nut trees and 15 hazel bushes in October 2019 (Stem van Groningen, 2019b). This initiative was chosen as one of the most favorite submissions. However, the project has not yet been executed, as, no suitable location for the trees has been found yet by the Municipality.

Figure 12 shows that this GCI interacts with five other actors. The initiator has been in contact with the Municipality to discuss the execution of the project The initiators of edible green Oosterparkwijk got the idea to submit their initiative through the neighborhood newspaper that was sent by the Coöperatieve Wijkraad Oosterparkwijk, which is a collaboration between residents and local council members. Also, the initiator stays in touch with the Coöperatieve Wijkraad about the progress of the project. Further, the GCI has been in contact with a local arborist ("Boomkweker") to pick suitable trees for the project. Also, the initiative has interacted with Stichting Toentje, to discuss if the foundation can receive harvest of the nut trees for the food bank. Finally, the GCI interacts with residents' organization "Bewonersorganisatie Oosterparkwijk" to exchange information.

Figure 12: Interactions between GCI "Eetbaar Groen Oosterparkwijk" and other actors. Source: Author.

Goudenregenplein

The Goudenregenplein is a small multifunctional urban greenspace located in the neighborhood Oosterparkwijk. Local residents are committed to improving the urban greenspace, by making it more biodiverse, attractive, and a social meeting place.

Figure 13: Plantation day at the Goudenregenplein. Source: Stichting Steenbreek Groningen (2020).

Figure 14 shows the interactions that the Goudenregenplein initiative has with eight other actors. The GCI received multiple forms of support from the Municipality of Groningen. The secretary of the neighborhood organization (Bewonersorganisatie Oosterparkwijk) is also an active member of the Goudenregenplein initiative. Further, Nijestee financed food during the plantation day of the Goudenregenplein initiative, as visualized in Figure 13. Local company "De Korenbloem Tuinen" shared information about plants with the GCI. Just like the edible green Oosterparkwijk initiative, Goudenregenplein also initiated their idea to the contest of "De Stem van Groningen". Werkpro created a planting design for the urban greenspace. Finally, WIJ Groningen supported the GCI by helping with gathering more participants and thinking along in meetings.
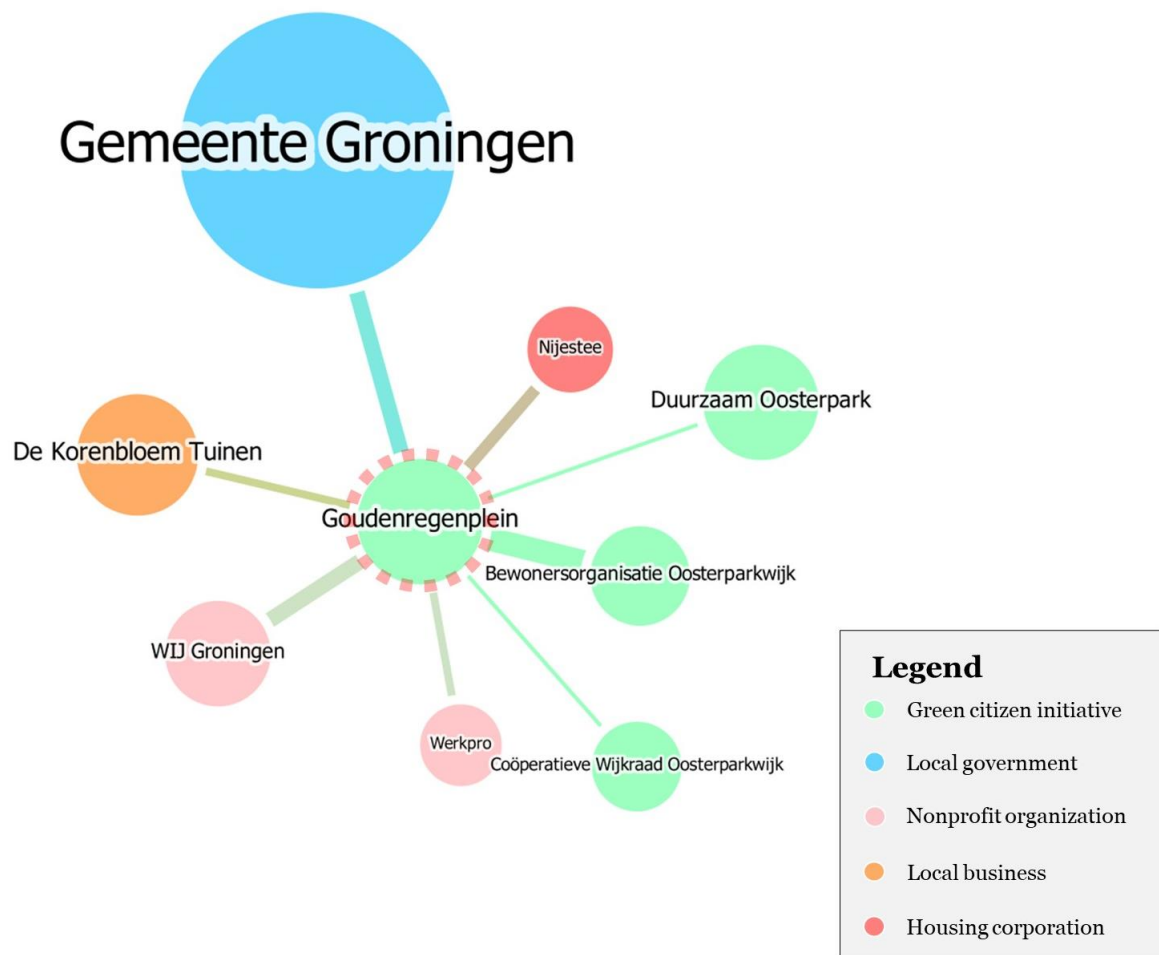
Figure 14: Interactions between GCI "Goudenregenplein" and other actors. Source: Author.

TuinInDeStad

TuinInDeStad is a GCI with a socially entrepreneurial character. The GCI used to receive funding, but nowadays they generate their own income through various sources, such as their camping, selling plants and Christmas trees, and renting out rooms in their building.

Figure 15: The TuinInDeStad terrain at the Tarralaan. Source: TuinInDeStad (2020b).

Figure 16 shows the eight other actors that TuinInDeStad interacts with. TuinInDeStad exchanges information with the Municipality of Groningen, Natuur en Milieufederatie Groningen, IVN Natuureducatie, Stichting Steenbreek Groningen, and Volkstuinvereniging Vinkhuizen. Also, TuinInDeStad exchanges materials with Operatie Steenbreek Groningen and local landscaping company De Tuinjuffer.
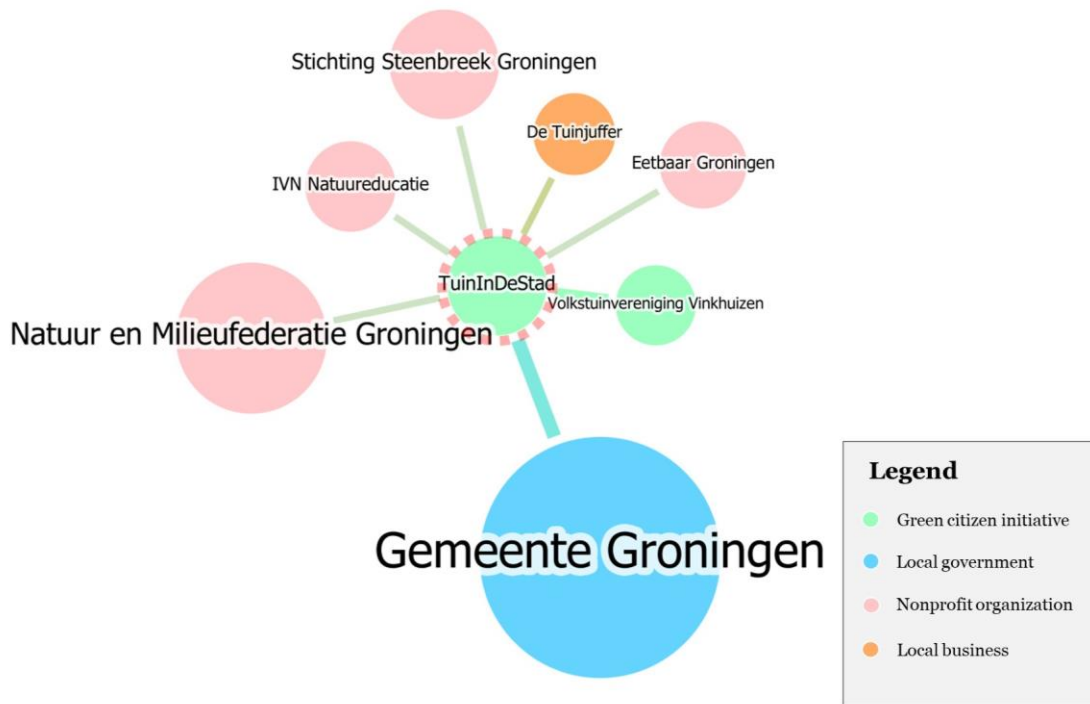
Figure 16: Interactions between GCI "TuinInDeStad" and other actors. Source: Author.

4.2.2 The Municipality of Groningen

- **Interviewee:** Laurens Stiekema, "Coordinator green citizen participation" at the executive city management department of the Municipality.

The second type of actor that was researched is the local government. After contacting the Province of Groningen, it turned out that this local government does not support GCIs within the city borders of Groningen. Therefore, only the Municipality of Groningen was researched.

The Municipality of Groningen is the most well-connected actor in the SNM. Also, the Municipality is the actor that supports the highest number of GCIs in Groningen on its own. This finding supports the hypothesis that the local government is the most intensely involved actor in supporting GCIs, based on the research of Mattijssen et al. (2018b). As Figure 17 shows, the Municipality of Groningen interacts with a wide variety of actors. Therefore, this chapter will not describe each interaction individually, but describe some of the main types of interaction that the Municipality of Groningen has. A larger version of the SNM of the Municipality can be found in Appendix VII.

First of all, nonprofit organizations indirectly stimulate GCIs for the Municipality through marketing and communication. For example, Natuur en Milieufederatie Groningen makes promotion for the project "Eetbaar Groningen" (stimulating citizens to start a neighborhood vegetable garden) on behalf of the Municipality. Also, the nonprofit organization Stichting Steenbreek Groningen is partly established by the Municipality. This is why employees of the foundation are simultaneously Municipality employees. The foundation is used by the Municipality to reach green goals. For example, Stichting Steenbreek finances facade gardens for both individual citizens and collective CIs. Second, the Municipality interacts with many different GCIs by facilitating their initiatives, which will be further discussed in Chapter 4.3. Finally, the Municipality interacts with local companies, housing corporations, and educational institutions by working together on greenspace development and maintenance projects.
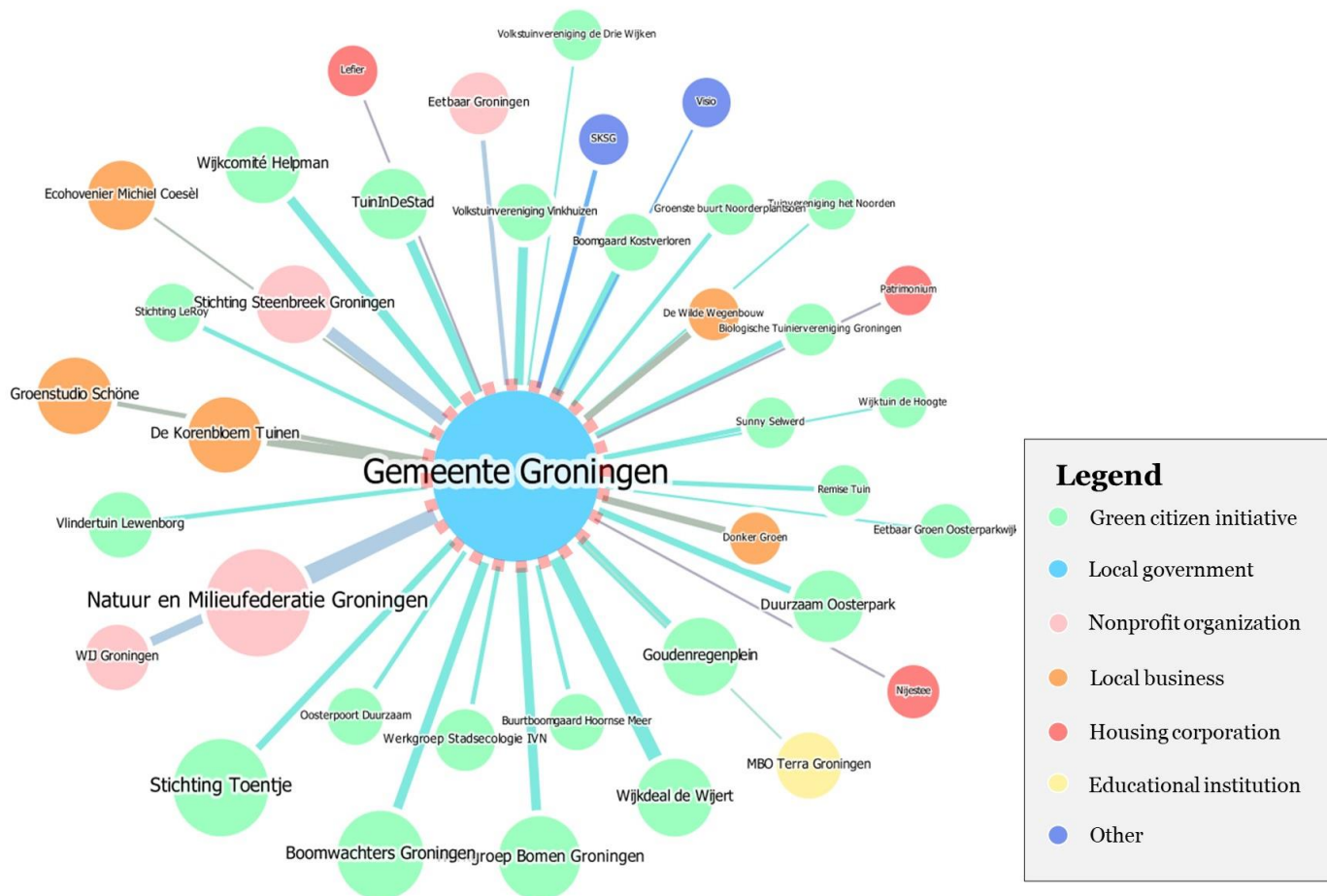
Figure 17: Interactions between the Municipality of Groningen and other actors. Source: Author.

4.2.3 Non-profit organizations

The third type of actor that was researched is nonprofit organizations that support GCIs. This chapter will give a general introduction of the three nonprofit organizations that were researched in-depth through personal interviews with employees of these organizations. Some of the main characteristics of the selected nonprofit organizations are listed in Table 9. Also, this chapter will zoom in on the interactions that these three nonprofit organizations have with other actors.

Name of nonprofit organization	Type of organization	Founded in	Number of initiators /members	Motivations	Activities	Interviewee
IVN Natuureducatie	Foundation (national) and association (local)	1960	Approximately 25,000	Connecting citizens to nature	Organizing nature education, projects, campaigns, and workshops	Wim Meijberg, Project Manager at different locations in the Netherlands
Natuur en Milieufederatie Groningen	Federation of about 50 nature and environment organizations	1973		Biodiversity; climate adaptation; energy transition; circularity	Stimulating GCIs; coordinating the green consultation of Groningen; involved in multiple urban greenspace projects	Silla Schouwstra, Communication Officer
Stichting Steenbreek Groningen	Foundation, regulated by the Municipality of Groningen	2015		Replacing greyspace by greenspace for a better living environment	Involving residents with greenspace and climate adaptation through support for green initiatives	Marc Remijn, Municipality employee and Coordinator of Stichting Steenbreek Groningen

Table 9: Main characteristics of the three selected non-profit organizations. Source: Author.

> **IVN Natuureducatie**
>
> IVN Natuureducatie is a national organization with approximately 25,000 members, 12 provincial offices, and 170 local volunteer departments. The local volunteer department of IVN Groningen-Haren has seven volunteer working groups that focus on different subjects, such as birds, urban ecology, and marketing.

Figure 18 shows the interactions that both IVN Natuureducatie and the Groningen working group for urban ecology (Werkgroep Stadsecologie IVN) have with other actors. The Municipality of Groningen exchanges information with the urban ecology working group. The GCI Werkgroep Bomen Groningen works together on projects with both IVN Natuureducatie and the urban ecology working group. GCI Stichting LeRoy exchanges information and materials with IVN, works together with them on projects, and receives support from them. GCIs TuinInDeStad and Oosterpoort Duurzaam exchange information with IVN Natuureducatie. Finally, IVN Natuureducatie interacts with Natuur en Milieufederatie Groningen by exchanging information and working together on projects.
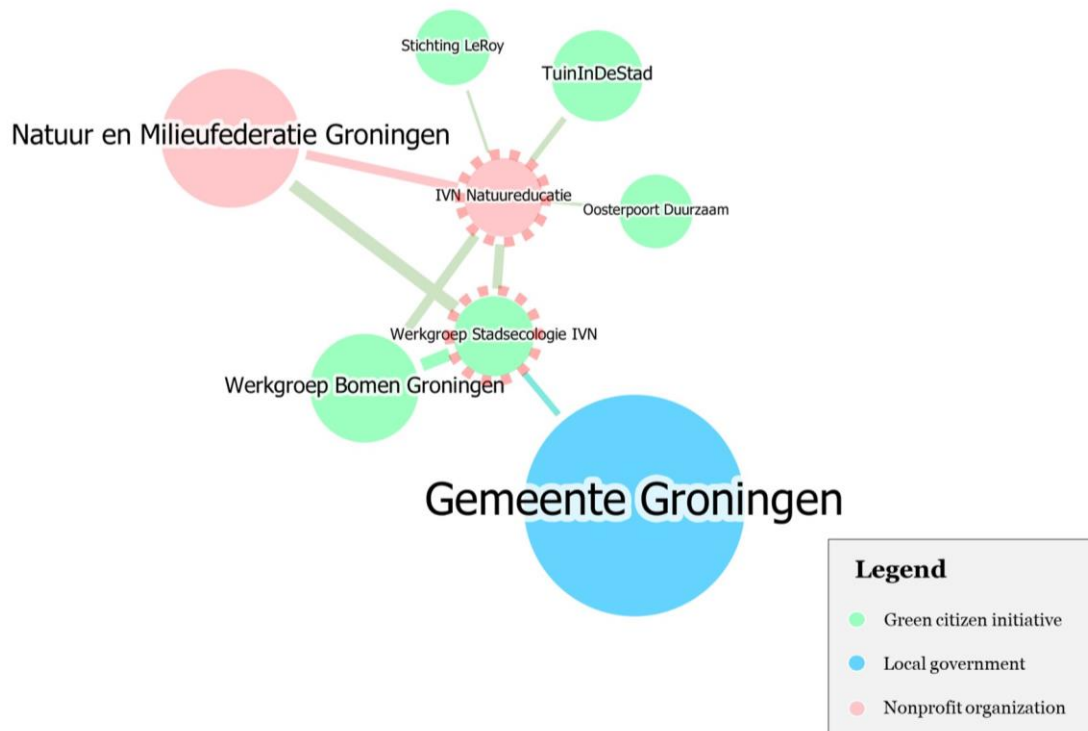
Figure 18: Interactions between IVN Natuureducatie, Werkgroep Stadsecologie IVN and other actors. Source: Author.

Figure 19 shows the interactions that NMG has with other actors, related to their activities for urban greenspace in Groningen. NMG works together with the Municipality and Stichting Steenbreek Groningen on projects to stimulate citizens to initiate green initiatives, such as the "Eetbaar Groningen" project. The main role of NMG in these projects is stimulating citizens through providing information on the NMG website and directing citizens to the Municipality or Operatie Steenbreek to receive (financial) support. Also, NMG interacts with other nonprofit organizations, local companies, GCIs, and the University of Groningen through exchanging information and working together on projects.
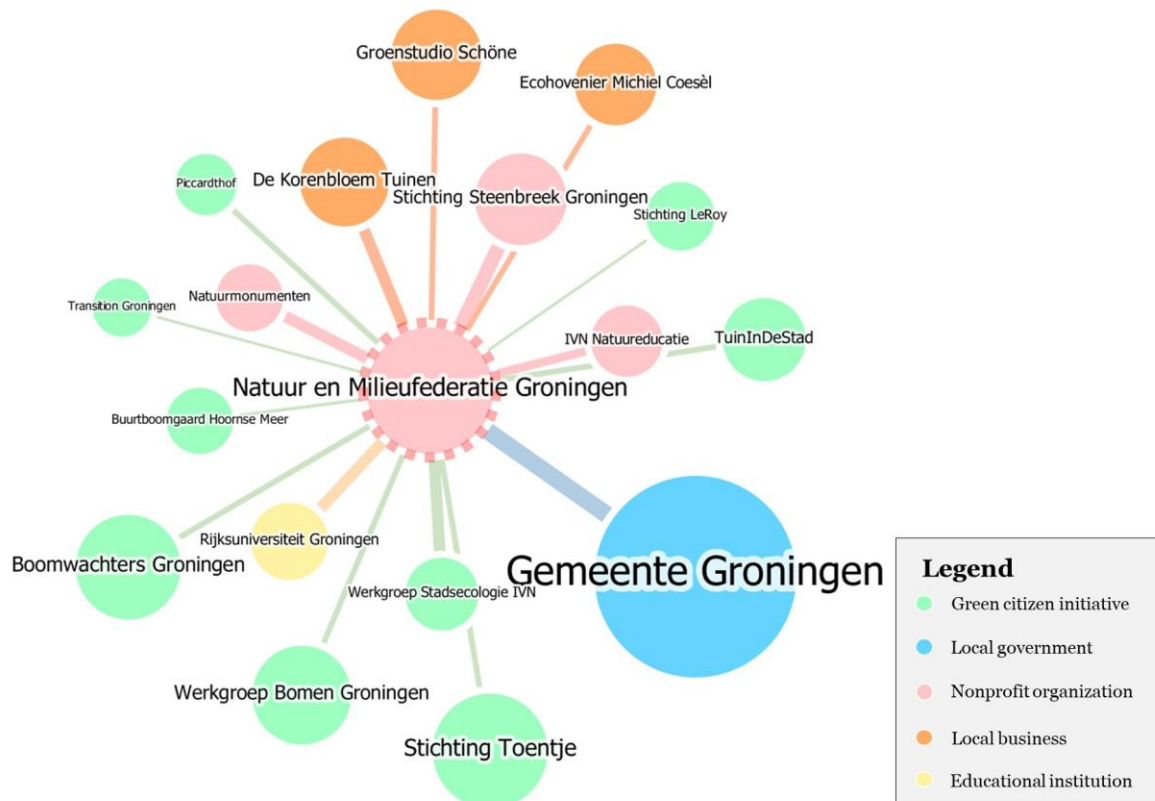
Figure 19: Interactions between nonprofit organization Natuur en Milieufederatie Groningen and other actors. Source: Author.

> **Stichting Steenbreek Groningen**
>
> The Municipality of Groningen is involved with the national project "Operatie Steenbreek", and therefore, Stichting Steenbreek Groningen has been established as a local department of the project. The foundation promotes multiple "products" to stimulate citizens to act for greenspace, such as a subsidies for green roofs, facade gardens, and tree dripline gardens. Stichting Steenbreek refers residents who want to start such a GCI to the Municipality of Groningen to submit an application. Therefore, Stichting Steenbreek mainly operates as a party that promotes support for GCIs, while the Municipality handles the requests.

Figure 20 shows the interactions that Stichting Steenbreek Groningen has with other actors, such as the above-mentioned interaction with the Municipality. The Natuur en Milieufederatie manages the website of Stichting Steenbreek Groningen. Stichting Steenbreek also interacts with local companies by hiring them to present at information activities for citizens. Furthermore, Stichting Steenbreek exchanges information and materials with GCIs.
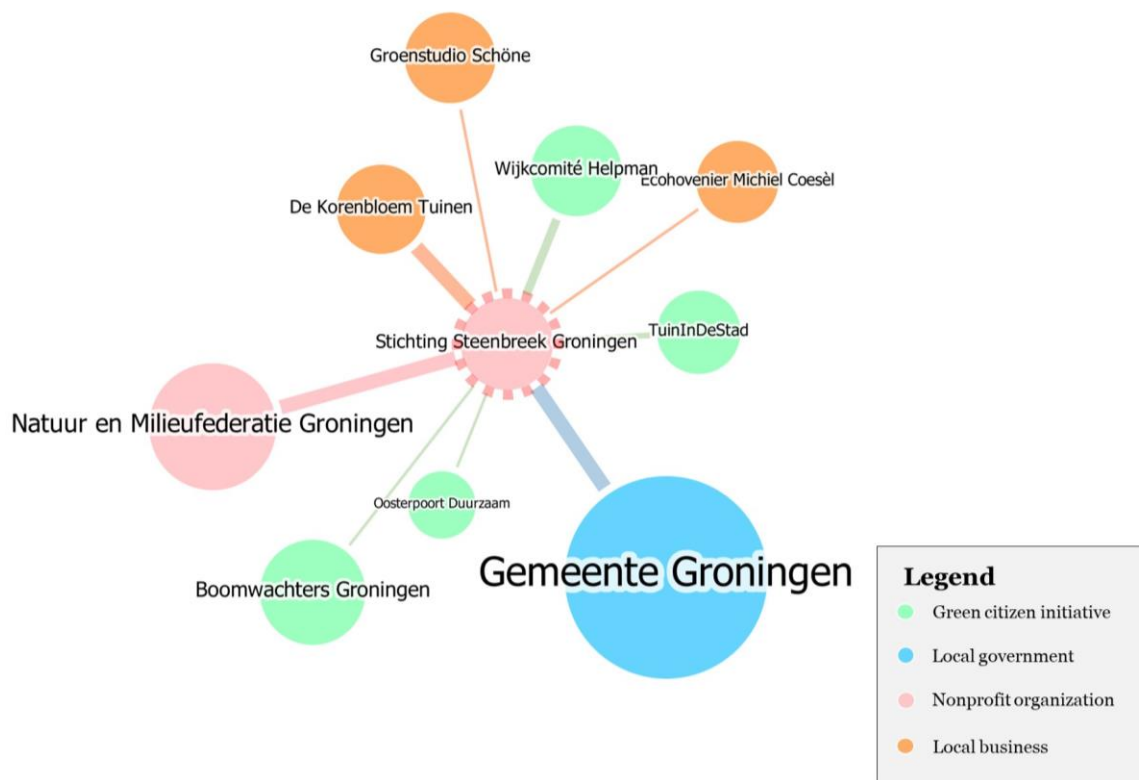
Figure 20: Interactions between nonprofit organization Stichting Steenbreek Groningen and other actors. Source: Author.

4.2.4 Local companies

The fourth type of actor is local companies that support GCIs. Usually, local companies charge a fee for the work that they deliver but there are also ways in which local companies support GCIs free of charge, for example by answering questions and giving advice. Therefore, this chapter describes the two local landscaping companies that were identified as companies that support GCIs in the questionnaire by GCIs. The main characteristics of those local companies are listed in Table 10.

Name of local company	Type of company	Found ed in	Motivations	Activities	Interviewee
Ecohovenier Michiel Coesèl	Ecological landscaping firm	2007	Biodiversity; creating healthy living environments	Ecological realization and preservation of gardens; organizing workshops, excursions and lectures for citizens' nature education	Michiel Coesèl, owner of the company; self-employed gardener
De Korenbloem, Tuinen met Visie	Landscaping firm	2004	Improving the quality of life; stimulating the appreciation of greenspace; biodiversity; climate adaptation	Design and construction of gardens and public greenspace; giving excursions and lectures for nature education; developing ideas for Operatie Steenbreek	Owner of the company; self-employed gardener

Table 10: Main characteristics of the two selected local companies. Source: Author.

Ecohovenier Michiel Coesèl

Despite that Michiel Coesèl's main activity as an ecological gardener is the development and maintenance of private gardens, he is also involved with GCIs occasionally. For example, he used to be an active member at urban allotment association "Volkstuin Vereniging Tuinwijck" in the past, where he organized informational activities for the other members of the GCI. Also, he created a design for a courtyard on behalf of a neighborhood committee in the Groninger neighborhood Oosterpoort.

Figure 21 shows the interactions that Ecohovenier Michiel Coesèl has with 10 other actors. Ecohovenier Michiel Coesèl interacts with the Municipality of Groningen, Eetbaar Groningen, Natuur en Milieufederatie Groningen, ecological landscaping firm Groenstudio Schöne, and Stichting Steenbreek Groningen by working together with them on projects. For example, he helped with stimulating GCIs by giving a workshop about facade gardens on behalf of Operatie Steenbreek, which was sponsored by the Municipality of Groningen. Also, Michiel Coesèl takes part in the green consultation "Groen Geluid", which is facilitated by the Natuur en Milieufederatie Groningen. Landscaping firm De Tuinjuffer exchanges materials with Ecohovenier Michiel Coesèl. Further on, Ecohovenier Michiel Coesèl helps with the development of urban greenspaces for GCIs and groups of citizens, such as the design, development, and maintenance of a green border around the church "Immanuelkerk". Finally, GCIs Wijkcomité Helpman and Stichting LeRoy indicated that they exchanged information with Ecohovenier Michiel Coesèl.
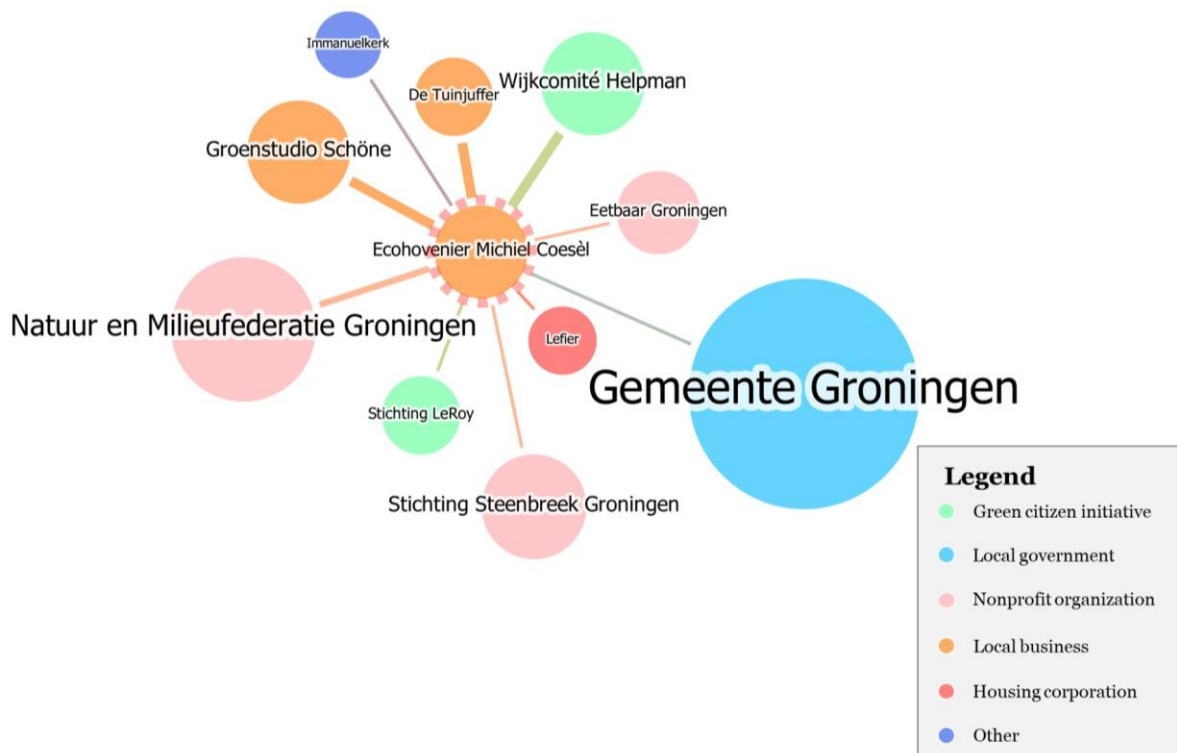
Figure 21: Interactions between "Ecohovenier Michiel Coesèl" and other actors. Source: Author.

Figure 22 shows the interactions that De Korenbloem has with seven other actors. De Korenbloem has been involved with Stichting Steenbreek Groningen from early on; the coordinator of Stichting Steenbreek described de Korenbloem as one of the founding fathers of the foundation. There is a close collaboration between Stichting Steenbreek, the Municipality, and NMG, which is why De Korenbloem interacts with those three actors. Further, the owner of De Korenbloem collaborated with landscaping firm Groenstudio Schöne in a TV show called "GoudGroen" to stimulate citizens to apply more greenery to their gardens. Also, De Korenbloem interacts with GCIs such as the Goudenregenplein initiative and district council "Wijkraad Gravenburg", by providing practical information about plants and creating designs.
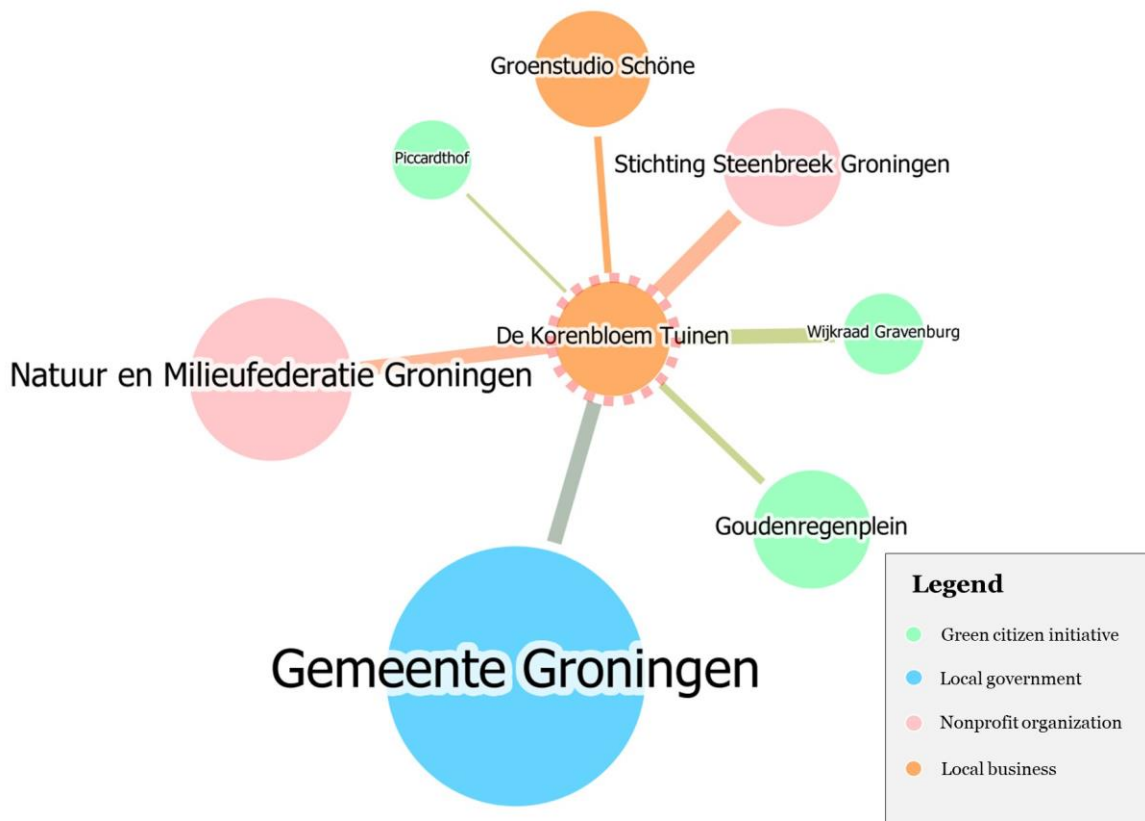
Figure 22: Interactions between "De Korenbloem, Tuinen met Visie" and other actors. Source: Author.

4.3 Support for green citizen initiatives in Groningen

The previous chapter explained which actors are involved in UGM and zoomed in on the characteristics and interactions of 10 specific actors. Subsequently, this chapter will answer the research question **"Which roles do the local government, nonprofit organizations, and local companies currently play while stimulating and facilitating green citizen initiatives in Groningen?"**.

First of all, this chapter will explain which roles were discovered that are not covered by the typology of roles of Oude Vrielink & Van de Wijdeven (2007). Second, this chapter will describe how GCIs are currently stimulated and facilitated by professional actors, based on the in-depth interviews with the 10 actors that were already introduced.

4.3.1 Newly discovered types of support

Next to the 11 roles of Oude Vrielink & Van de Wijdeven (2007), three novel types of support were discovered in the interviews with both GCIs and supporting actors. The most mentioned one is a type of practical facilitation that is specific to supporting GCIs: "the gardener". For example, an interviewee of Buurtboomgaard Hoornse Meer (2020) explains how the Municipality helps with maintaining certain elements of the neighborhood orchard:

"We also ask for help with mowing. There is a lot of grass in our neighborhood orchard, which is mowed by the Municipality. -
Interviewee Buurtboomgaard Hoornse Meer, 19-11-2020.

Another type of support that was mentioned often, but does not fit properly under one of the 11 roles is "the teacher". Professional actors teach GCIs by answering citizens' questions, or by giving lectures, excursions, or workshops for a GCI. Information is often provided to teach citizens specific skills related to urban greenspace management. Therefore, providing information is a type of personal facilitation, as it empowers initiators. For instance, the Natuur en Milieufederatie Groningen taught citizens how to conserve urban farming harvest:

"For example, we recently held an information meeting on how to conserve the harvest from a food forest, because often ancient techniques such as bottle preserving or drying are very suitable" -
Interviewee Natuur en Milieufederatie Groningen, 12-11-2020.

A final remaining type of instrumental facilitation that was mentioned frequently is creating designs, with the corresponding role of "the designer". Often, citizens have a broad idea of what type of greenspace they want to realize. However, it can be difficult to create a detailed and achievable plan of how the public space should look like. Therefore, the Municipality and local companies sometimes help GCIs with creating designs for their urban greenspace. For example, a Municipality architect created designs for the Goudenregenplein initiative:

In the in-depth interviews, the stimulation and facilitation of GCIs in Groningen was researched by asking the interviewees about support roles based on the typology 11 support roles by Oude Vrielink & Van de Wijdeven (2007). This resulted in each support role being mentioned a certain number of times. Appendix VIII shows the number of times that the 11 support roles of Oude Vrielink & Van de Wijdeven (2007) and the three novel support roles were mentioned by both the members of the GCIs and the professional actors. The sums of the number of times that each of these support roles was mentioned are visualized in Figure 23.
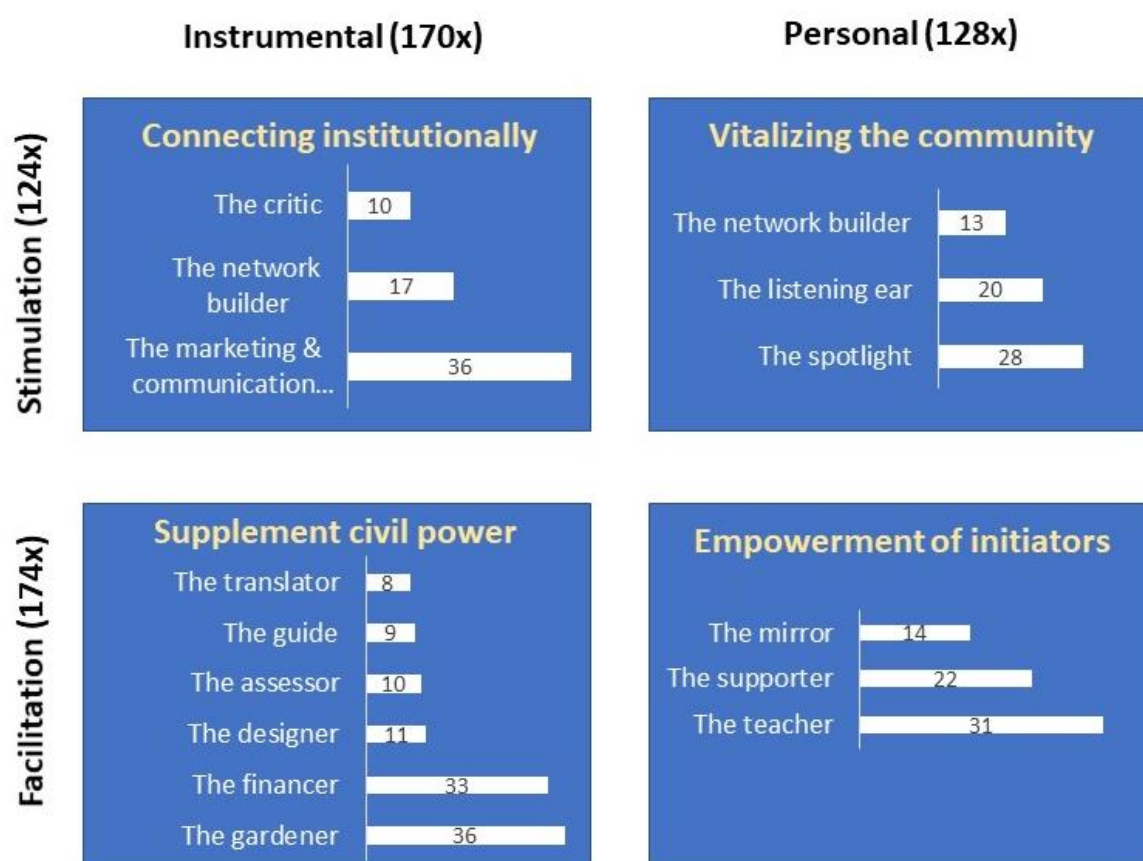
Figure 23: The number of times that the 11 theoretical support roles and the three newly discovered support roles were mentioned in the in-depth interviews. Based on Oude Vrielink & Van de Wijdeven (2011). Source: Author.

4.3.2 Stimulation of green citizen initiatives

GCIs can be stimulated using two approaches: an instrumental approach (connecting institutionally) or a personal approach (vitalizing the community) (Oude Vrielink & Van de Wijdeven, 2011). To get a more in-depth understanding of how GCIs are stimulated, the two corresponding approaches of support will now be explained based on the most commonly played roles and the context in which these roles are played.

Connecting institutionally

As shown in Figure 23, the marketing & communication manager is the most mentioned role used to "connect institutionally" i.e. to create a suitable infrastructure for the initiation of GCIs. Professional actors in Groningen mainly try to stimulate GCIs with an instrumental approach by using marketing and communication methods, such as websites, social media, newsletters, or even contests to win subsidies for "your idea" as a citizen. The main types of marketing & communication methods that were discussed during the interviews were online marketing techniques. For example, Figure 24 shows two screenshots of websites of nonprofit organizations that use marketing & communication to stimulate GCIs.

Figure 24: Examples of online marketing for GCI stimulation (in Dutch) by Stichting Steenbreek Groningen (2019) on the left & Natuur en Milieufederatie Groningen (2013) on the right.

Marketing and communication are often used as instruments to "sell" the offers that professional actors have for GCI support. For example, the interviewee of Stichting Steenbreek explains how he sees their subsidies and discounts on greenery as "products" that they try to sell through their communication channels:

If you have nice products, you should also show them... I always compare it with Coca-Cola: if you have a good product you should simply try to sell it and communicate about it.
Interviewee Stichting Steenbreek Groningen, 20-11-2020.

The ongoing efforts from professional actors to promote the possibilities to initiate a GCI through marketing and communication seems to have had a large impact. The amount of GCIs has risen enormously over the last decade. In 2010, only 21 GCIs yet existed within the city of Groningen (Gemeente Groningen, 2010). However, in 2020, already more than 400 facade gardens and 200 green roofs were developed through support from Operatie Steenbreek, next to dozens of other types of GCIs such as neighborhood gardens (Gemeente Groningen, 2020). According to the interviewee of NMG, this is also why stimulation of GCIs became less necessary over the years:

"The role of Natuur en Milieufederatie Groningen started with Eetbare Stad Groningen, to activate citizens: to point out the possibilities... Afterward, our function actually changed a bit... Neighborhood orchards were so trendy that it did not need any more stimulation... We were overwhelmed with requests."
Interviewee Natuur en Milieufederatie Groningen, 12-11-2020.

This finding leads to the expectation that professional actors in Groningen now focus more on facilitation of the GCIs that already exist, than on stimulating even more citizens to initiate a GCI. As Figure 23 shows, the interviews indeed indicate that facilitation of GCIs was discussed more often than stimulation.

Vitalizing the community

As shown in Figure 23, the spotlight is the most mentioned role used to "vitalize the community", i.e. to create a sense of connectedness between citizens and between citizens and their neighborhood. The results of this research show that the spotlight role is a powerful stimulant for GCIs, as it "shines a light" on the examples of GCIs that already exist. Professional actors arrange publicity for the efforts of the already existing GCIs. In this way, they aim to inspire other residents to initiate a green project as well, or to join a GCI in their neighborhood.

> "If you keep on showing examples (of GCIs), people will start thinking: "Oh, that is easy, we can also do that ourselves". And that is what I am aiming to show."
> Interviewee Stichting Steenbreek, 20-11-2020.

For example, Figure 25 shows how Stichting Steenbreek promotes a GCI for tree dripline gardens on their website:

Figure 25: Example of how Stichting Steenbreek puts GCIs in "the spotlight" on their website (in Dutch). Source: Stichting Steenbreek Groningen (2020b).

Another benefit of the spotlight role is that the members of the GCI that are "put in the spotlight" receive public recognition and appreciation, which increases citizens' self-esteem (Oude Vrielink & Van de Wijdeven, 2011). This leads to increased willingness to act for urban greenspace projects again in the future (Boluijt, 2009). Also, it gives citizens the feeling that they are seen and appreciated, as the interviewee of the Goudenregenplein initiative explained:

> *"When I was working in the courtyard… immediately people from GoudGroen (tv show) showed up and asked if they could interview me about the green roofs… So, our efforts are indeed noticed… I think more and more people are becoming interested."*
> Interviewee Goudenregenplein, 24-11-2020.

4.3.3 Facilitation of green citizen initiatives

Next to stimulation of new GCIs, already existing GCIs can be facilitated in two different ways: with an instrumental approach (supplement civil power) and with a personal approach (empowerment of initiators). These two facilitation approaches will be explained below based on the most commonly played corresponding roles and the context in which these roles are played.

Supplement civil power

As visualized in Figure 23, "the gardener" and "the financer" are two frequently mentioned roles used to "supplement civil power", i.e. to complement or slightly adjust actions of GCIs in the right direction. Therefore, facilitation of GCIs in Groningen mainly revolves around helping citizens to develop or maintain urban greenspaces. This can happen in two different ways: directly (through helping citizens by supplying or maintaining greenery), or indirectly (by providing citizens with money that they can then spend themselves to develop or maintain greenery). According to the interviewee of Stichting Steenbreek, the choice between direct or indirect funding of greenery depends on the capacities of the members of the GCI, as some citizens need more active steering than others:

> *"In some neighborhoods or streets, people can do a lot themselves… But sometimes I also come to places where people don't have that ability… I might then select and buy the plants for them myself."*
> Interviewee Stichting Steenbreek, 20-11-2020.

From the interviews it also became clear that financial facilitation is often given to GCIs because the activities of the GCI fit within the (policy) goals of the professional actor:

> *"…on the project level, you set certain goals. And those goals are connected to activities, and financing (for GCIs) is linked to those activities ."*
> Interviewee IVN Natuureducatie, 20-11-2020.

… So then they (the Municipal area team) can say to the councilor: "Look, this is the Municipality's policy and this initiative totally fits within the policy goals, so that's why we gave them the money."
Interviewee Goudenregenplein, 24-11-2020.

Receiving funding as a GCI in Groningen is, therefore, generally easier if the activities align with the policy goals as formulated by the Municipality.

Empowerment of initiators

Finally, Figure 23 shows that "the teacher" was the most mentioned role to empower initiators, i.e. to aim for personal growth of the members of GCIs. This is not an unexpected finding, as citizens often lack the skills and knowledge needed to manage greenspaces (Ghose & Pettygrove, 2014). Professional actors in Groningen teach initiators in multiple ways, for example by answering questions, or by giving lectures, excursions, or workshops for members of GCIs. Sometimes, citizens are taught specific skills needed to maintain urban greenspace, such as members of Buurtboomgaard Hoornse Meer:

"In the beginning, we did not yet know that much about greenery… So then two of our volunteers followed a pruning course at Landschapsbeheer Groningen."
Interviewee Buurtboomgaard Hoornse Meer, 19-11-2020.

The role of the teacher was mostly mentioned by local gardening companies in the in-depth interviews. These kinds of companies are sometimes hired by the Municipality to give workshops or lectures about urban greenspace. Also, they are often open to answer greenery related questions by members of GCIs. Both of the interviewees by local companies also use their website to provide information and give tips about urban (ecological) gardening for citizens (for example: Ecohovenier, 2019).

4.4 Challenges that green citizen initiatives in Groningen encounter

As mentioned before, GCIs often encounter several challenges that can, amongst others, be countered by the support of professional actors (Buijs et al., 2019; Fung, 2004). However, sometimes the interaction between professional actors and citizens leads to "frustration" instead of facilitation of CIs (Nederhand et al., 2014; Wamsler, 2016). Therefore, it is important to analyze how GCI members experience the support that they receive. This chapter will describe the opinions that came up during the in-depth interviews of both GCI members and professional actors about (1) which issues do GCIs encounter related to the support by professional actors (2) which challenges do GCIs encounter in general. Appendix IX shows which issues were mentioned how frequently and by which actor(s). These findings will be used to answer the secondary research question **"Which challenges do green citizen initiatives in Groningen encounter?"**

During the in-depth interviews, seven issues related to the support that GCIs receive from professional actors were discussed. In Figure 26, the challenges related to support of GCIs in Groningen are ranked from most mentioned to least mentioned, including the number of times that the issue was mentioned by GCI members (green) and professional actors (blue). Because of the wide variety of mentioned challenges, the two most mentioned ones were selected and are discussed more in-depth below.
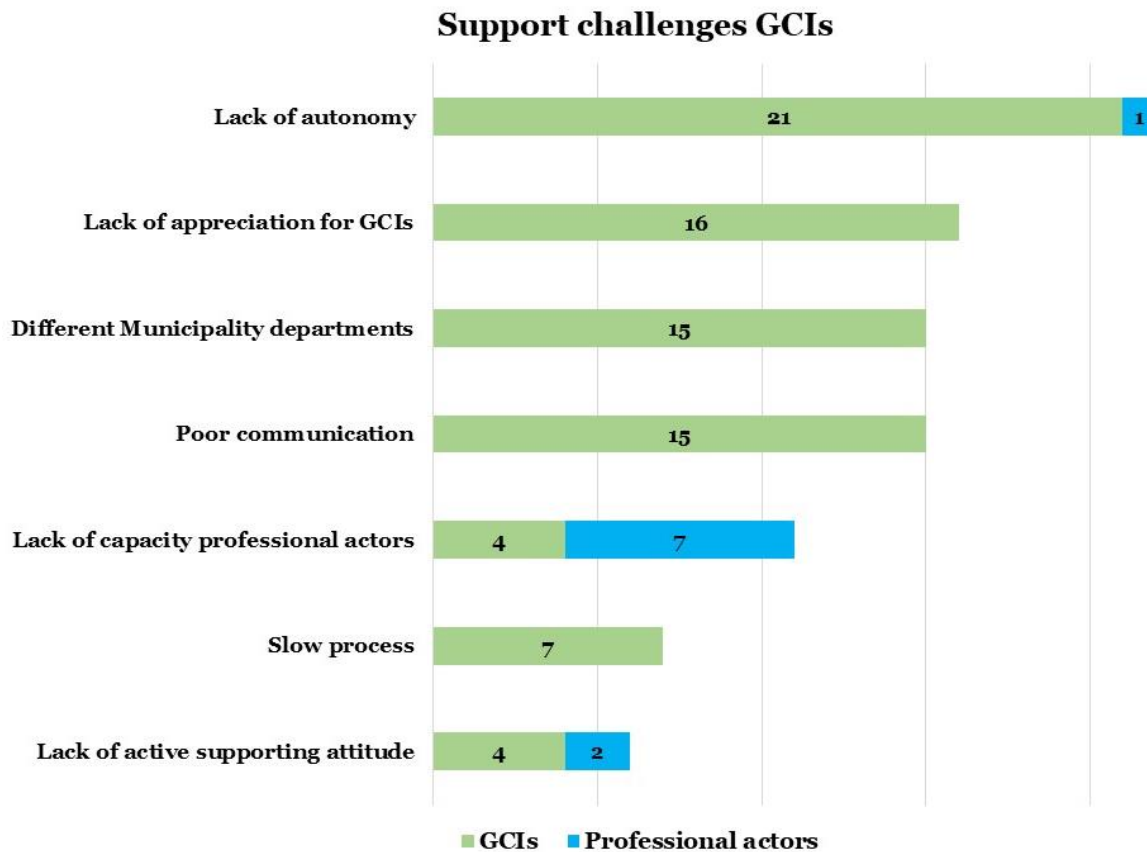
Figure 26: The issues related to support for GCIs that were discussed during the in-depth interviews. Source: Author.

Firstly, "lack of autonomy" means that citizens experience that they do not have full control over their own activities and goals. For example, GCIs often need to meet certain requirements in order to receive support or to be allowed to perform certain activities. GCIs in Groningen need to meet Municipal requirements as described in Appendix VI. Also, if citizens want to perform activities that are not related to urban greenspace– such as constructing a community building or fence on their urban greenspace – they often need to apply for expensive permits. Some GCI members tend to experience these issues as a limitation to the abilities of their initiative or a sign of distrust in GCIs:

"Citizens need boundaries, but they mainly need space to develop themselves… The Municipality only helps citizens if it fits within the boundaries of what they think is right… As long as you are doing things that fit within their policies."
Interviewee TuinInDeStad, 27-11-2020.

Further, GCI activities often have to align with the goals of local policies formulated by the Municipality council in the Netherlands (Nederhand et al., 2014). In Groningen, the requirements that GCIs have to meet related to policies are experienced as delimiting by GCI members. As reflected in the types of support that GCIs in Groningen receive, professional actors mostly focus on instrumental types of support, which often rely on providing support based on procedural frameworks. The frustration of GCI members might be caused by the fact that these procedures and requirements give the local government the ability to steer and influence the shaping and outcome of GCIs.

A lack of appreciation for GCIs was the second most mentioned challenge related to GCI support. This means that members of GCIs tend to experience that their efforts are not really valued by professional actors:

"In general, the appreciation by for volunteers in the neighborhood by official organizations is quite low".
Interviewee Bewonersorganisatie Oosterparkwijk, 24-11-2020.

This issue might be explained by the fact that professional actors tend to support GCIs because they contribute to policy goals, for example increased urban biodiversity, which might give citizens the idea that their efforts are not personally valued, but only seen as an "instrument" to reach policy goals. Examples of indirect benefits of GCIs that are not included in the policy goals of the Municipality of Groningen are the development of knowledge and skills of citizens and increased health and well-being for people that participate in a GCI (Mattijssen et al., 2018).

"You can also take a look at these kinds of initiatives like… What are the benefits, how do we expand these, how can we keep them alive? How can we make sure that the initiatives have an impact in the neighborhoods?
Interviewee TuinInDeStad, 27-11-2020.

The other five challenges related to the support of GCIs in Groningen are explained in Table 11. The main message of these challenges is that the process surrounding support for GCIs could be improved in terms of willingness to support, communication, and speed.

Different Municipality departments	When GCIs want to perform a certain activity that is not related to urban greenspace, they start dealing with different Municipality departments than the department related to GCI support. These departments tend to be more difficult to communicate with as a citizen and they are less willing to support GCIs.
Poor communication	One of the GCI members experienced a lot of uncertainty due to poor communication related to the support that her initiative might receive. There was a lack of communication on if, when and how they will receive support.
Lack of capacity professional actors	Professional actors experience a lack of time and money to effectively support the high amount of requests of GCIs.
Slow process	Sometimes, GCI members have to wait for a long time to receive support by professional actors.
Lack of active supporting attitude	Professional actors in Groningen mainly support GCIs in a reactive manner: they only deliver support when they are approached by a GCI that asks for help. There is a lack of a proactive supporting attitude that shows the willingness of professional actors to help GCIs.

Table 11: Explanation of the meaning of the five least mentioned challenges related to support of GCIs. Source: Author.

Second, it is important to analyze which general challenges GCIs in Groningen experience. These are problems that GCIs encounter which are not necessarily related to support. However, this could lead to insights into how these problems can be resolved through support of professional actors. Figure 27 shows the eight GCI related challenges, ranked from most mentioned to least mentioned. Because of this wide variety of mentioned challenges, the two most mentioned ones have been selected to be discussed more in-depth.

## GCI related challenges

Challenge	GCIs	Professional actors
Gathering participants	25	
Lack of capacity GCIs	13	11
Conflicting uses public space	13	4
Disagreements	1	13
Distrust	5	3
Personal stress	6	
Lack of maintenance		5
Litter and vandalism	3	

■ GCIs ■ Professional actors
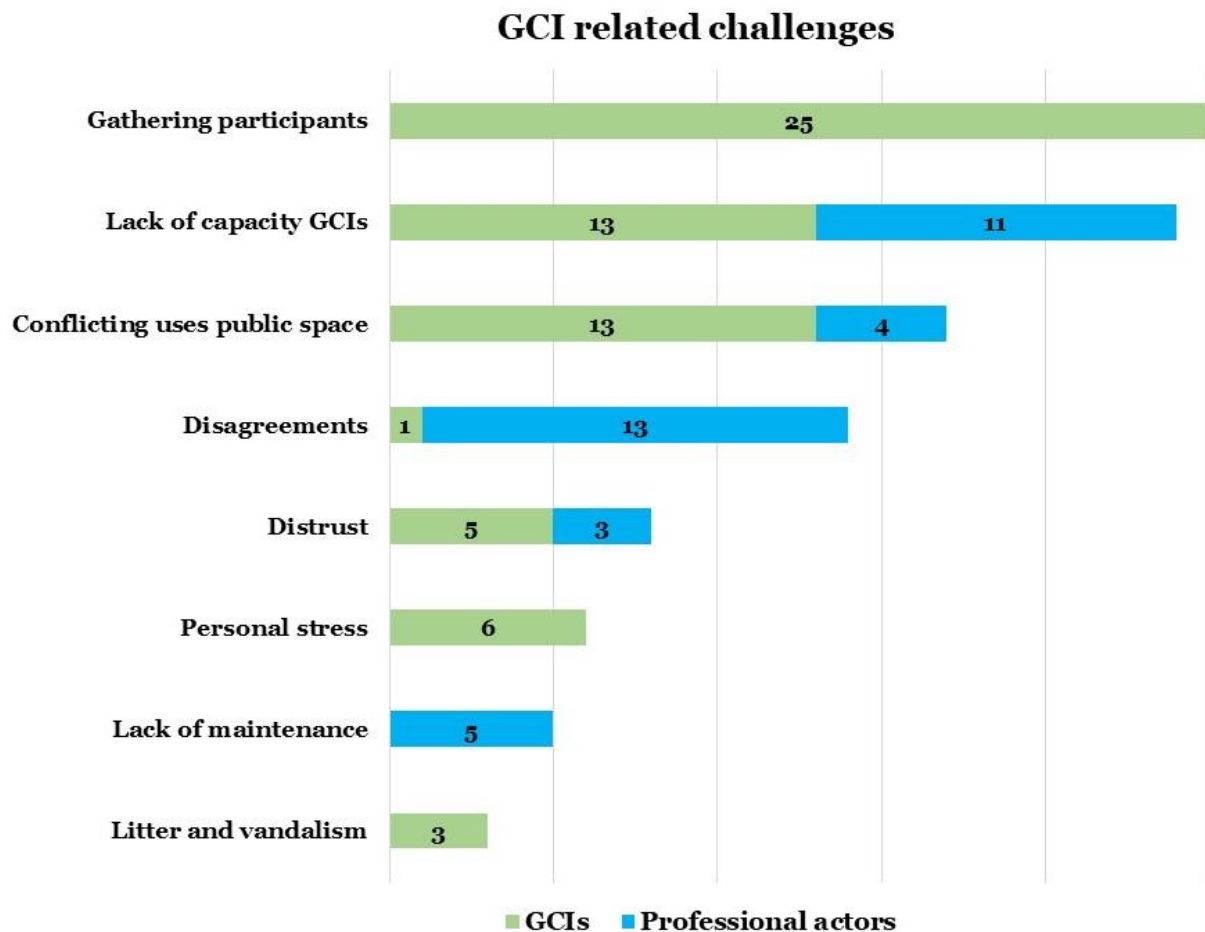
Figure 27: The issues related to GCIs that were discussed during the in-depth interviews. Source: Author.

The most mentioned challenge was the difficulty to find enough participants. GCIs in Groningen struggle with finding participants, as well as with keeping these people attached in the long term. Different reasons were given as a possible explanation for this challenge, such as a lack of affinity with nature, socioeconomic issues, and general individualism. GCIs try to find new participants by creating brochures or flyers, by going door to door in the neighborhood, or by organizing activities for the neighborhood. Sometimes professional actors indirectly support GCIs in finding participants through the spotlight role by advertising for the initiative. Most GCI members however think that "word of mouth" is the most effective strategy to find new participants.

The second most mentioned challenge that GCIs encounter is a lack of capacity. This lack of "capacity" is made up out of a lack of three aspects: money, time, and knowledge. This is not

an unexpected finding, as most of the time, citizens simply do not have expert knowledge or skills related to urban greenspace (Ghose & Pettygrove, 2014). Also, citizens often have limited time to spend on the GCI because it is often a "side activity" next to their jobs. Finally, GCIs often have limited financial resources, which is why they often depend on funding from professional actors (Nederhand et al., 2014). This lack of capacity of GCIs in some cases leads to the termination of the initiative:

"Often, initiatives are picked up enthusiastically, but then after 1 or 1.5 years, the initiative quietly dies because it takes too much time and effort for the citizens."
Interviewee Bewonersorganisatie Oosterparkwijk, 24-11-2020.

On the other side, citizens are resourceful and tend to overcome these challenges by asking for support from professional actors. Also, two of the interviewed GCIs partly generate their own income, for example through selling harvest from urban gardening or by selling Christmas trees. The empowerment of initiators could help to increase the capacities of GCI members, for example by teaching them about urban greenspace (skills).

The other six challenges of GCIs in Groningen are shortly explained in Table 12. The main message of these challenges is that GCIs encounter various internal and external challenges due to both social and physical aspects of the neighborhood.

Conflicting uses public space	GCIs are in a vulnerable position because their greenspaces are located in public space. Their project can, for example, be terminated if the Municipality decides that the land will be repurposed into residential development.
Disagreements	Internal disagreements within the GCI about how to the urban greenspace should be developed, designed or maintained.
Distrust	Fear by local residents in the neighborhood about negative consequences of a GCI or negative effects of the urban greenspace developed by a GCI.
Personal stress	Stress experienced by members of GCIs due to the large amount of efforts that they need to put into the projects, or the frustrations that they experience related to the GCI.
Lack of maintenance	Poor maintenance of the urban greenspace(s) of GCIs due to various reasons.
Litter and vandalism	Pollution or damage of the urban greenspace(s) of GCIs, for example due to dog poo.

Table 12: Explanation of the meaning of the six least mentioned challenges related to GCIs in general. Source: Author.

5. Discussion & conclusion

5.1 Urban greenspace management: a shared task

Citizens have become increasingly involved in UGM since the 1980s as part of the shift from government to governance in the Netherlands (Mattijssen et al., 2018). However, in the city of Groningen, the number of GCIs has mainly increased since 2010, after the Municipality published the urban nature policy document Groene Pepers (Gemeente Groningen, 2009) and a policy note that explains how citizens can initiate GCIs (Gemeente Groningen, 2010). Therefore, Municipality policy might have served as a trigger for GCIs to arise. For example, the policy documents might have raised attention for the ability to start a GCI. Also, the policy paper about green citizen participation (Gemeente Groningen, 2010) provided the first official ability for receiving support as a GCI.

According to scientific literature, UGM in the Netherlands is now a shared task among different types of actors, such as the local government, civil society, nonprofit organizations, and local companies (Mattijssen et al., 2018b). Through SNA, the interactions between these four types of actors were mapped. The SNA revealed a large network of different types of actors. This finding is coherent with examples from other cities, where other types of actors are also playing an increasingly important role in UGM, next to the local government (Wittmayer et al., 2017). The SNA did, however, show that the local government is the most "well-connected" actor in the network of UGM. The Municipality has the highest amount of interactions with other actors (GCIs, nonprofit organizations, and local companies), which shows that the local government is a key actor in UGM. Therefore, the role of the local government in developing and maintaining urban greenspace has not necessarily *declined* as new actors stepped in. However, the roles of professional actors in UGM in European cities did *change* from regulating and steering roles towards more enabling and facilitating roles (Aylett, 2013; Gilbert, 2005). Also in the city of Groningen, the Municipality shifted from being one of the main actors responsible for UGM to being part of the larger network of UGM, where it mainly facilitates and stimulates the actions of other actors that are committed to UGM.

5.2 Applying the typology of roles and proposed changes

The typology of Oude Vrielink & Van de Wijdeven (2011) was used as a framework to analyze the roles that professional actors play while stimulating and facilitating GCIs. This typology proved to be a useful tool to uncover the types of support that are given to GCIs in Groningen, as all of the roles were recognized and acknowledged by the interviewees to a certain degree. However, three new roles specific to *green* citizen initiatives were discovered and are proposed as an addition to the framework for analyzing support of GCIs. These are the gardener (supplement civil power), the designer (supplement civil power), and the teacher (empowerment of initiators).

Table 13 visualizes how often professional actors use the four types of support (Very often, often, sometimes, or rarely), based on the results of the in-depth interviews (Table 15). Also, the table shows which roles the type of actor mainly focus on while taking each of the four support strategies, according to the number of times that the actor type mentioned the roles in the in-depth interviews.

	Local government	Nonprofit organizations	Local companies
Connecting institutionally (instrumental stimulation)	Often, mainly through the marketing & communication manager	Often, mainly through the marketing & communiation manager	Rarely, through the marketing & communication manager
Vitalizing the community (personal stimulation)	Often, mainly through the listening ear	Sometimes, mainly through the listening ear	Rarely, through the spotlight
Supplement civil power (instrumental facilitation)	Very often, mainly through the financer	Sometimes, mainly through the financer	Sometimes, mainly through the designer
Empowerment of initiators (personal facilitation)	Sometimes, mainly through the teacher	Rarely, mainly through the teacher	Sometimes, mainly through the teacher

Table 13: Summary of how three types of professional actors support GCIs in Groningen. Source: Author.

Table 13 shows a few notable results. Firstly, the local government and nonprofit organizations support GCIs using very similar roles. However, the local government mainly focuses on financing, while nonprofit organizations mainly focus on stimulating GCIs through marketing & communication. Local companies are least involved with supporting GCIs, however, if they do so, they mainly play the role of the teacher.

After combining the findings of Table 13 with the results from the interviews with GCI members (Figure 23), it can be concluded that professional actors in Groningen mainly focus on facilitation of GCIs. A reason for this finding might be that the amount of requests to start a GCIs is already quite high, and professional actors are facing trouble with effectively

supporting all the GCIs due to a lack of time and money. Therefore, at this point, stimulation of even more GCIs is not seen as the most important activity, according to professional actors. However, stimulation of GCIs was still mentioned 125 times by interviewees, which might indicate that professional actors still put a lot of effort into the stimulation of GCIs. In neighborhoods with lower socioeconomic status in Groningen, such as Selwerd or Beijum, citizens are less likely to join a GCI. Therefore, professional actors mostly still aim to stimulate GCIs in these kinds of neighborhoods through vitalizing the community (e.g. Municipality of Groningen, 2020).

5.3 The dilemma between letting go and staying in control

Another finding was that professional actors focus more on supporting GCIs in an instrumental manner, than in a personal manner. This result is in line with the findings of Oude Vrielink & Van de Wijdeven (2011), who found that supporting actors in the Netherlands mainly focus on the instrumental side of support based on procedural frameworks and offering financial means. In Groningen, the focus of professional actors mainly lies on "supplementing civil power" by direct or indirect financial support, for example through subsidies or through supplying or maintaining greenery for GCIs. Of course, financial support for GCIs is essential because funding by professional actors is an important resource for CIs (Nederhand et al., 2014). Also, these types of instrumental support fit well within the procedural logic of professional actors, and they are easy to concretize in policy measures (Oude Vrielink & Van de Wijdeven, 2011).

The roles of professional actors have changed as CIs are taking over more and more responsibilities (Aylett, 2013; Gilbert, 2005). On the one hand, professional actors try to take a more "modest" role, by letting go of their former regulating and steering role, and by transferring responsibilities to CIs (Oude Vrielink & Verhoeven, 2011). But on the other hand, professional actors try to stay in control through instrumental procedures, which gives them the ability to steer or slightly adjust the outcomes of citizen initiatives. For example, based on whether or not GCIs will receive funding for specific activities, professional actors in Groningen can guide the outcomes of UGM by GCIs. The risk of this instrumental type of support is that professional actors try to keep control using public interventions (Trommel, 2009). As Brandsen et al. (2017) explain, the involvement of citizens is not necessarily a way to give citizens more control, it is also an approach used by professional actors to steer (governmental) policies. Therefore, GCIs are often approached like "executive agencies" of professional actors' (policy) goals (Van Dam et al., 2014; Van der Steen et al., 2013). Also, communities, or CIs, may become overly dependent and unable to exist without the instrumental support of professional actors (Brandsen et al., 2017). Also in Groningen, financial support for GCIs in Groningen is often bound to certain requirements that have to be met based on (policy) goals of the professional actor.

As GCIs tend to fulfill a lot of policy goals of the Municipality of Groningen, such as urban greenspace realization and improved social cohesion, one could wonder "Why does the Municipality try to "hold on" to GCIs through procedural approaches, instead of giving them more trust and freedom to realize their own goals?". This could be explained by the fact that local governments are used to organizational structures where they "give shape" to participation procedures from A to Z. These types of working methods fit within the traditional logic of bureaucratic decision-making processes aimed at output management, performance measurement, and accountability (Oude Vrielink & Verhoeven, 2011).

This is also an explanation for why GCI members experience a lack of control over their activities and goals: to receive funding, the activities of GCIs have to align with (policy) goals. This sometimes limits the abilities of GCIs in Groningen regarding the activities that they want to undertake, especially if GCIs want to broaden their activities. For example, if GCIs want to start a project or undertake activities that are not directly related to UGM, they might not be able to undertake these activities. The formal rules policies thus tend to decrease flexibility

and constrain the ability of professional actors to respond to citizens' needs and demands (Bakker et al., 2012). Also, inflexibility and bureaucracy of procedures are often difficult to understand for citizens and experienced as discouraging (Bakker et al., 2012). Therefore, a procedural approach to supporting GCIs may counteract what it wants to promote: a lively, self-governing civil society (Brandsen et al., 2017).

5.4 How to improve the support for green citizen initiatives?

This chapter will combine the answers to the secondary research question to find an answer to the main research question *"How are citizen initiatives for urban greenspace management in Groningen stimulated and facilitated by the local government, nonprofit organizations, and local companies, and how could this be improved?"*. The findings of this research contribute to knowledge development on how GCIs are currently stimulated and facilitated, and how this could be improved, to respond to the knowledge gap of how to support GCIs (Van Stokkom & Toenders, 2010).

Right now, professional actors are mostly focused on holding on to GCIs through instrumental support approaches based on procedures and requirements. However, GCIs need a balance between instrumental support and personal support (Oude Vrielink & Van de Wijdeven, 2011). GCIs in would thus benefit from increased use of more flexible support approaches that are focused less on procedures and requirements, but instead are more "citizen-oriented" (Oude Vrielink & Verhoeven, 2011). A more personal support approach means listening to what *citizens* find important for their neighborhood, instead of what *policy* says is important. Also, being more flexible with support procedures will increase the autonomy of GCIs, which could lead to greenspaces that better fit within the desires of the citizens (Jones et al., 2016). In this way, the perspective of the initiators becomes central, which makes GCI members feel appreciated, recognized, and heard.

Professional actors in Groningen are already personally involved with GCIs, for example through personal conversations or on-site visits, which are highly appreciated by GCI members. However, initiators still generally experience that support for GCIs is focused more on achieving underlying (policy) goals of the supporting actors themselves, than on appreciating the GCI and its secondary effects, such as innovations in public spaces shape and use (Alm et al., 2002; Schmidt et al., 2018). If professional actors also acknowledge the indirect benefits of a GCI that are not directly related to policies, they will value a GCI more intrinsically and increase the appreciation of GCIs (Van der Heijden et al., 2007).

GCIs are mainly supported through instrumental facilitation procedures, such as financing. On the other side, the personal type of facilitation - the empowerment of initiators – especially lags behind. Citizens generally experience a lack of capacity, such as time, money, and skills. If professional actors would give more attention to the personal growth and development of the members of GCIs, the capacities of citizens would be boosted (Oude Vrielink & Van de Wijdeven, 2011). For example, this could increase citizens' ability to perform their tasks or generate their own funding. Therefore, professional actors should try to personally empower initiators, as this increases their autonomy and does justice to their capabilities.

In short, professional actors should try to create an increased balance between their role as instrumental and procedural financer and the role as a more citizen-oriented, personally involved supporter, by increasing the emphasis on the latter. There are a couple of main activities (or roles) that might help professional actors, such as planning practitioners at the local government, nonprofit organization employees, and employees at local companies to take this step. Professional actors should mainly focus more on "empowering initiators". This can be done by "holding up a mirror" in personal conversations with citizens, to make clear

how they view themselves and the neighborhood, and by acting as a supporter who shows personal commitment when citizens ask for this. Also, professional actors should use the role of "the teacher" more often to teach citizens useful skills, such as how to generate their own income or how to do greenspace maintenance, to increase citizens' self-sustainability.
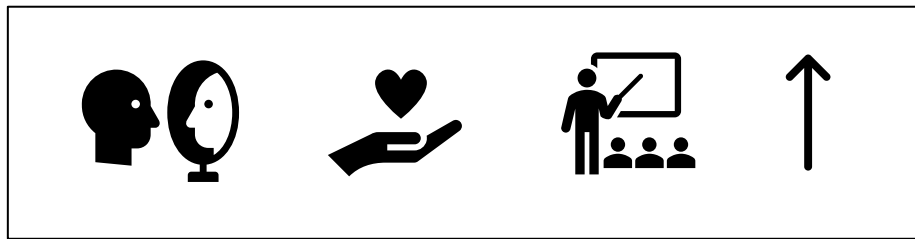
To finalize, the typology of roles 14 support roles can be used in planning practice by professional actors to review and criticize their own ways of supporting GCIs. In this way, planning practitioners at the local government, as well as other actors that support GCIs, can gain increased insight into the roles that they currently play to support GCIs. Also, they can see the change of focus in roles that is needed to bridge the gap between how they currently support GCIs and how they will hopefully aim to support GCIs: as a balance between instrumental and personal support approaches.

5.5 Reflection

This case study research focused on how GCIs are supported within the city of Groningen. Different contextual situations in other cities, such as differences in Municipality policy, social cohesion in neighborhoods, or the amount of already available urban greenspaces might lead to different results in other cities. Also, the period of data collection might influence the results, as the data collection took place in November 2020, during the COVID-19 epidemic. Firstly, this made it more difficult to find participants for the questionnaire and in-depth interviews, as fewer GCIs were active and reachable, as they could not undertake group activities. Second, due to the epidemic, most interviews were held online instead of in real life, which sometimes created practical issues, such as a delayed start of the interviews or reduced audibility of the interviewees. Also, this made it more difficult to respond to body language than would normally be possible.

From a hindsight-perspective, it would have been valuable to have scheduled more time per interview, to be able to ask more in-depth about the reasons why and the context in which professional actors give support. Also, it would have been useful to ask the professional actors how they value the type(s) of support that they give to GCIs, and which roles they think of as valuable and which as somewhat unnecessary and why, to get an increased understanding of why professional actors chose to use a certain support approach (or not). Another issue related to the qualitative data collection methods is that interviews are often affected by conditions that may influence the outcome. For example, interviewees may tend to give socially acceptable answers during face-to-face interactions, or the interviewer might "steer" the answers of the interviewee in a certain direction because of how the questions are asked (Salazar, 1990). Although the researcher tried to prevent this as much as possible by asking open questions, from hindsight-perspective certain interview methods such as the conversation tool (Figure 7) might have steered respondents to talk about certain types of support more often than others.

The results of the SNA are based on the questionnaire. The analysis showed that some of the responses might be incomplete or (partly) incorrect. For example, when two actors both indicated that they interact with each other, one of the actors sometimes said that they interact weekly, while the other side said that they interact once a month. Also, sometimes only one of two actors that filled in the questionnaire indicated that they have an interaction with the other actor. This could mean that the other actor forgot to mention the interaction with the other actor, which indicates that some interactions might have been forgotten to mention by respondents.

5.6   Recommendations for future research

This research focused on how GCIs are supported by local governments, nonprofit organizations, and local companies. However, the SNA indicated that GCIs also interact with other (G)Cis, educational institutions, and housing corporations. Therefore, for future research it would be interesting and useful to see which roles different types of actors take while stimulating and facilitating GCIs, to get a more comprehensive view of how GCIs are supported on the whole.

Also, for follow-up research, it would be valuable to create a distinction of different types of GCIs (e.g. urban gardening initiatives, tiny forests, collective facade gardens, etc.) and examine if these types of GCIs all benefit from the same type of balance between instrumental and personal support, or if certain types of GCIs require a different support approach.

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Appendixes

Appendix I	Questionnaire
Appendix II	Output Questionnaire
Appendix III	Interview guides
Appendix IV	Transcripts of the interviews
Appendix V	Codebook
Appendix VI	Municipality's requirements and procedures for initiating a GCI
Appendix VII	Social Network Maps
Appendix VIII	Code-document tables of roles
Appendix IX	Code-document tables of challenges

Appendix I: Questionnaire (in Dutch)

Introductie text

Via deze enquête wordt onderzoek gedaan naar het netwerk aan organisaties, bedrijven en initiatieven die betrokken zijn bij stedelijk groen, oftewel: natuur in de stad Groningen. Bent u direct of indirect betrokken bij het realiseren of onderhouden van groen, bijvoorbeeld vanuit een bewonersinitiatief, overheidsinstantie, bedrijf, of organisatie, dan kunt u bijdragen aan dit onderzoek door deze enquête in te vullen. Het invullen van de enquête duurt hoogstens 5 minuten. Alvast bedankt voor uw inbreng!

Kent u mensen van andere organisaties die ook betrokken zijn bij stedelijk groen in Groningen? Dan zou het erg op prijs gesteld worden als u deze enquête ook met hen zou willen delen door de volgende link naar ze door te sturen: [link to questionnaire]

Vraag 1:

Vanuit **welk soort partij** bent u betrokken bij stedelijk groen in de stad Groningen?

- ❏ Ik ben lid/vrijwilliger bij een bewonersinitiatief/-werkgroep
- ❏ Ik ben medewerker van een overheidsorganisatie (gemeente, provincie, overig)
- ❏ Ik ben lid/medewerker van een non-profit organisatie (stichting, vereniging, of overige organisatie)
- ❏ Ik ben medewerker van een bedrijf
- ❏ Overig, namelijk _____

Vraag 2:

Wat is de naam van de organisatie van waaruit u betrokken bent bij stedelijk groen in de stad Groningen?

- ❏ _____

Vraag 3:

Op welke manier(en) is uw organisatie betrokken bij stedelijk groen in de stad Groningen? (meerdere antwoorden mogelijk)

- ❏ Het inzetten voor de ontwikkeling van stedelijk groen
- ❏ Het onderhouden van stedelijk groen (beschermen, tuinieren, etc.)
- ❏ Het ondersteunen van andere partijen die zich inzetten voor stedelijk groen
- ❏ Het samenwerken met andere partijen die zich inzetten voor stedelijk groen
- ❏ Het verlenen van informatie over stedelijk groen
- ❏ Overig, namelijk _____

Vraag 4:
Met welke overige partijen werkt u samen en/of komt u mee in aanraking **tijdens uw inzet voor stedelijk groen in de stad Groningen**? (meerdere antwoorden mogelijk)

Overheidsorganisaties

- ❏ Gemeente Groningen
- ❏ Provincie Groningen
- ❏ Overig, namelijk (2x) _____

Non-profit organisaties

- ❏ Stichting Steenbreek
- ❏ IVN Natuureducatie
- ❏ Natuur- en Milieufederatie Groningen
- ❏ Natuurmonumenten
- ❏ Stichting Toentje
- ❏ Eetbaar Groningen
- ❏ Overig, namelijk (3x) _____

Onderwijsinstellingen

- ❏ Rijksuniversiteit Groningen
- ❏ Hanzehogeschool Groningen
- ❏ MBO Terra Groningen
- ❏ Noorderpoort Groningen
- ❏ Alfa-College Groningen
- ❏ Overig, namelijk (2x) _____

Lokale bedrijven

- ❏ De Korenbloem - Tuinen met Visie
- ❏ De Tuinjuffer
- ❏ Ecologisch Hoveniersbedrijf Michiel Coesèl
- ❏ Groenstudio Schöne
- ❏ Overig, namelijk (4x) _____

Bewonersinitiatieven

- ❏ Groenste Buurt Noorderplantsoen
- ❏ Werkgroep Stadsecologie IVN
- ❏ Stichting LeRoy
- ❏ TuinInDeStad
- ❏ Vlindertuin Lewenborg
- ❏ Eetbaar Groningen
- ❏ Werkgroep Oosterpoort Duurzaam
- ❏ Volkstuinvereniging de Drie Wijken
- ❏ Vereniging Volkstuinen Tuinwijck
- ❏ Vereniging van Amateur Tuiniers Vinkhuizen
- ❏ Tuinvereniging het Noorden
- ❏ Tuindersvereniging Diverdoatsie
- ❏ Tuin- en recreatievereniging Stadspark
- ❏ Biologische Tuiniervereniging Groningen
- ❏ Amateurtuindersvereniging Piccardthof
- ❏ Werkgroep Coenderspark
- ❏ Wijktuin de Hoogte
- ❏ Transition Groningen
- ❏ Coöperatieve Wijkraad Oosterparkwijk
- ❏ Sunny Selwerd
- ❏ HortusHof
- ❏ Buurtboomgaard Hoornse Meer
- ❏ Remise Tuin

- ❏ Bewonersorganisatie Oosterparkwijk
- ❏ Eetbaar Groen Oosterparkwijk
- ❏ Goudenregenplein
- ❏ Geen
- ❏ Overig, namelijk (5x):

  _____

[Het antwoord op vraag 4 linkt door naar de opties in vraag 5 en 6]

Vraag 5:
Hoe vaak komt uw organisatie **over het algemeen** in aanraking met _____
[na(a)m(en) ingevulde organisatie(s) in vraag 4]?: (meerdere antwoorden mogelijk)

- ❏ Eén of meerdere keren per week
- ❏ Eén keer per 2 weken
- ❏ Eén keer per maand
- ❏ Eén keer per kwartaal
- ❏ Eén keer per half jaar
- ❏ Eén keer per jaar of minder
- ❏ n.v.t.

Vraag 6:
Op welke manier komt u in aanraking/werkt u samen met _____ [na(a)m(en)
ingevulde organisatie(s) in vraag 4]?: (meerdere antwoorden mogelijk)

- ❏ We wisselen kennis of informatie met elkaar uit
- ❏ We wisselen materialen met elkaar uit
- ❏ We werken samen aan projecten
- ❏ We ontvangen steun van deze organisatie (bijvoorbeeld: subsidie, informatie, promotie, etc.)
- ❏ We geven steun aan deze organisatie
- ❏ Overig, namelijk: _____
- ❏ n.v.t.

Question 7:
Zou u eventueel mee willen werken aan een interview over de ontwikkeling en het onderhoud van stedelijk groen in Groningen en de rol die bewoners(initiatieven) hierin spelen?

Laat dan hier uw e-mailadres of telefoonnummer achter. Zo niet, dan kunt u deze vraag overslaan.

- ❏ E-mailadres of telefoonnummer: _____

Closing text:
Bedankt voor het invullen van de enquête! Als u vragen heeft over de enquête, kunt u een e-mail sturen naar: m.e.r.kats@student.rug.nl.

Kent u mensen van andere organisaties die ook betrokken zijn bij stedelijk groen in Groningen? Dan zou het erg op prijs gesteld worden als u deze enquête ook met hen zou willen delen door de volgende link naar ze toe te sturen: [link enquête].

Appendix II: Output questionnaire

Source	Actor type source	Target	Actor type target	Weight	Interaction type
Eetbaar Groen Oosterparkwijk	GCI	Gemeente Groningen	Local government	1	4
Eetbaar Groen Oosterparkwijk	GCI	Stichting Toentje	GCI	1	1
Eetbaar Groen Oosterparkwijk	GCI	Coöperatieve Wijkraad Oosterparkwijk	GCI	1	1; 4
Eetbaar Groen Oosterparkwijk	GCI	Bewonersorganisatie Oosterparkwijk	GCI	1	1
Eetbaar Groen Oosterparkwijk	GCI	Boomkweker	Local company	1	2
Natuur en Milieufederatie Groningen	Nonprofit organization	Gemeente Groningen	Local government	6	3; 4
Natuur en Milieufederatie Groningen	Nonprofit organization	Stichting Steenbreek Groningen	Nonprofit organization	5	5
Natuur en Milieufederatie Groningen	Nonprofit organization	IVN Natuureducatie	Nonprofit organization	3	1; 3; 6
Natuur en Milieufederatie Groningen	Nonprofit organization	Natuurmonumenten	Nonprofit organization	4	1; 3; 6
Natuur en Milieufederatie Groningen	Nonprofit organization	Stichting Toentje	GCI	2	6
Natuur en Milieufederatie Groningen	Nonprofit organization	Rijksuniversiteit Groningen	Educational institution	4	1;3
Natuur en Milieufederatie Groningen	Nonprofit organization	De Korenbloem Tuinen	Local company	4	1;3;6
Natuur en Milieufederatie Groningen	Nonprofit organization	Ecohovenier Michiel Coesèl	Local company	2	6
Natuur en Milieufederatie Groningen	Nonprofit organization	Groenstudio Schöne	Local company	2	6
Natuur en Milieufederatie Groningen	Nonprofit organization	Werkgroep Stadsecologie IVN	GCI	4	1; 3
Natuur en Milieufederatie Groningen	Nonprofit organization	TuinInDeStad	GCI	2	1; 2; 3; 6
Natuur en Milieufederatie Groningen	Nonprofit organization	Piccardthof	GCI	2	6
Natuur en Milieufederatie Groningen	Nonprofit organization	Transition Groningen	GCI	1	6
Natuur en Milieufederatie Groningen	Nonprofit organization	Buurtboomgaard Hoornse Meer	GCI	2	6
Groenstudio Schöne	Local company	Stichting Steenbreek Groningen	Nonprofit organization	1	3; 6
Groenstudio Schöne	Local company	MBO Terra Groningen	Educational institution	1	6
Groenstudio Schöne	Local company	De Korenbloem Tuinen	Local company	2	3
Groenstudio Schöne	Local company	Ecohovenier Michiel Coesèl	Local company	3	3

Groenstudio Schöne	Local company	De Groene Hoen	Local company	6	1; 2; 3
Groenstudio Schöne	Local company	Grunndak	Local company	6	1; 2; 3
TuinInDeStad	GCI	Gemeente Groningen	Local government	4	1
TuinInDeStad	GCI	Stichting Steenbreek Groningen	Nonprofit organization	2	1; 2
TuinInDeStad	GCI	IVN Natuureducatie	Nonprofit organization	2	1; 4
TuinInDeStad	GCI	Eetbaar Groningen	Nonprofit organization	2	1
Stichting LeRoy	GCI	Gemeente Groningen	Local government	2	4
Stichting LeRoy	GCI	IVN Natuureducatie	Nonprofit organization	1	2; 3; 4
Stichting LeRoy	GCI	Natuur en Milieufederatie Groningen	Nonprofit organization	1	1
Stichting LeRoy	GCI	Ecohovenier Michiel Coesèl	Local company	1	1
Stichting LeRoy	GCI	Natuurmonumenten	Nonprofit organization	1	1
Duurzaam Oosterpark	GCI	Gemeente Groningen	Local government	3	1; 2; 3; 4
Duurzaam Oosterpark	GCI	Coöperatieve Wijkraad Oosterparkwijk	GCI	3	2; 3; 4
Duurzaam Oosterpark	GCI	Bewonersorganisatie Oosterparkwijk	GCI	3	1; 4; 5
Duurzaam Oosterpark	GCI	Goudenregenplein	GCI	1	1
Duurzaam Oosterpark	GCI	WIJ Oosterparkwijk	GCI	3	1; 2; 3; 4; 5
Duurzaam Oosterpark	GCI	WerkPro	Nonprofit organization	6	1; 2; 3; 4; 5
Ecohovenier Michiel Coesèl	Local company	Gemeente Groningen	Local government	1	3
Ecohovenier Michiel Coesèl	Local company	Stichting Steenbreek Groningen	Nonprofit organization	1	3
Ecohovenier Michiel Coesèl	Local company	Eetbaar Groningen	Nonprofit organization	1	3
Ecohovenier Michiel Coesèl	Local company	Lefier	Housing corporation	1	3
Ecohovenier Michiel Coesèl	Local company	Immanuelkerk	Other	1	3
De Tuinjuffer	Local company	Ecohovenier Michiel Coesèl	Local company	3	2
De Tuinjuffer	Local company	TuinInDeStad	GCI	2	2
Volkstuinvereniging Vinkhuizen	Local company	Gemeente Groningen	Local government	4	6
Volkstuinvereniging Vinkhuizen	GCI	TuinInDeStad	GCI	3	1
Tuinvereniging het Noorden	GCI	Gemeente Groningen	Local government	1	4
De Korenbloem Tuinen	Local company	Gemeente Groningen	Local government	4	3; 4
De Korenbloem Tuinen	Local company	Stichting Steenbreek Groningen	Nonprofit organization	5	1; 3
De Korenbloem Tuinen	Local company	Piccardthof	GCI	1	3
De Korenbloem Tuinen	Local company	Goudenregenplein	GCI	2	1; 3
De Korenbloem Tuinen	Local company	Wijkraad Gravenburg	GCI	4	3; 5

Remise Tuin	GCI	Gemeente Groningen	Local government	2	4
Werkgroep Bomen Groningen	GCI	Gemeente Groningen	Local government	4	6
Werkgroep Bomen Groningen	GCI	Provincie Groningen	Local government	1	6
Werkgroep Bomen Groningen	GCI	IVN Natuureducatie	Nonprofit organization	3	6
Werkgroep Bomen Groningen	GCI	Natuur en Milieufederatie Groningen	Nonprofit organization	2	6
Werkgroep Bomen Groningen	GCI	Werkgroep Stadsecologie IVN	Nonprofit organization	4	6
Werkgroep Bomen Groningen	GCI	Vleermuiswerkgroep	GCI	4	1; 6
Werkgroep Bomen Groningen	GCI	Stichting Bomenridders Groningen	GCI	6	1; 6
Werkgroep Bomen Groningen	GCI	Boomwachters Groningen	GCI	5	1; 6
Wijkdeal de Wijert	GCI	Gemeente Groningen	Local government	6	1; 2; 3; 4; 6
Wijkdeal de Wijert	GCI	Hanzehogeschool Groningen	Educational institution	6	1; 3
Wijkdeal de Wijert	GCI	MBO Terra Groningen	Educational institution	6	1; 3; 6
Wijkdeal de Wijert	GCI	SWO Groen	Educational institution	6	3; 4; 5; 6
Wijkcomité Helpman	GCI	Gemeente Groningen	Local government	4	1; 2; 3; 4; 5
Wijkcomité Helpman	GCI	Stichting Steenbreek Groningen	Nonprofit organization	3	1; 3
Wijkcomité Helpman	GCI	De Tuinjuffer	Local company	3	1; 3
Wijkcomité Helpman	GCI	Ecohovenier Michiel Coesèl	Local company	3	1; 3
Wijkcomité Helpman	GCI	Vereniging Volkstuinen Tuinwijck	GCI	4	1; 4
Wijkcomité Helpman	GCI	Werkgroep Coenderspark	GCI	2	1
Wijkcomité Helpman	GCI	Klimaatadaptatie Groningen	Nonprofit organization	4	1; 3
Biologische Tuiniervereniging Groningen	GCI	Gemeente Groningen	Local government	3	1; 3; 4
Stichting Toentje	GCI	Gemeente Groningen	Local government	3	1; 3; 4; 5
Stichting Toentje	GCI	Provincie Groningen	Local government	1	4
Stichting Toentje	GCI	Eetbaar Groningen	Nonprofit organization	1	4
Stichting Toentje	GCI	Rijksuniversiteit Groningen	Educational institution	2	1
Stichting Toentje	GCI	Hanzehogeschool Groningen	Educational institution	3	1
Stichting Toentje	GCI	MBO Terra Groningen	Educational institution	6	1; 2; 3; 5
Stichting Toentje	GCI	Noorderpoort Groningen	Educational institution	3	1
Stichting Toentje	GCI	Alfa-college Groningen	Educational institution	3	1
Stichting Toentje	GCI	WIJ Groningen	Nonprofit organization	6	1; 2; 3; 5
Stichting Toentje	GCI	Korte Voedselketen Netwerk	GCI	6	1; 2; 3; 4; 5

Stichting Toentje	GCI	Coöperatieve Wijkraad Oosterparkwijk	GCI	1	1
Stichting Toentje	GCI	Bewonersorganisatie Oosterparkwijk	GCI	1	4
Stichting Toentje	GCI	Goudenregenplein	GCI	1	1
Goudenregenplein	GCI	Nijestee	Housing corporation	3	4
Goudenregenplein	GCI	Gemeente Groningen	Local government	4	1; 3; 4
Goudenregenplein	GCI	Coöperatieve Wijkraad Oosterparkwijk	GCI	1	1
Goudenregenplein	GCI	Bewonersorganisatie Oosterparkwijk	GCI	6	1; 3; 4
Goudenregenplein	GCI	WIJ Groningen	Nonprofit organization	4	1; 3; 4
Goudenregenplein	GCI	Werkpro	Nonprofit organization	2	1; 3
Boomwachters Groningen	GCI	Gemeente Groningen	Local government	4	2
Boomwachters Groningen	GCI	Provincie Groningen	Local government	1	2
Boomwachters Groningen	GCI	Stichting Steenbreek Groningen	Nonprofit organization	1	2
Boomwachters Groningen	GCI	Natuur en Milieufederatie Groningen	Nonprofit organization	2	2
Boomwachters Groningen	GCI	Rijksuniversiteit Groningen	Educational institution	6	1
Boomwachters Groningen	GCI	Ecoplan	Local company	4	3
Boomwachters Groningen	GCI	Vlinder er Bij Natuurtuin	Local company	4	3
Boomwachters Groningen	GCI	Stadspark Natuurlijk	GCI	6	1
Widar Vrijeschool Natuurplein	GCI	Eetbaar Groningen	Nonprofit organization	1	4
Widar Vrijeschool Natuurplein	GCI	Natuur- en duurzaamheidseducatie Groningen	Nonprofit organization	1	4
Widar Vrijeschool Natuurplein	GCI	Buitenwerk Tuininrichting	Local company	3	3
Wijktuin de Hoogte	GCI	Gemeente Groningen	Local government	1	4
Volkstuinvereniging de Drie Wijken	GCI	Gemeente Groningen	Local government	1	4
Volkstuinvereniging de Drie Wijken	GCI	Eetbaar Groningen	Nonprofit organization	1	4
Boomgaard Kostverloren	GCI	Gemeente Groningen	Local government	4	1; 4
Boomgaard Kostverloren	GCI	Eetbaar Groningen	Nonprofit organization	3	1
Vlindertuin Lewenborg	GCI	Gemeente Groningen	Local government	2	1; 4
Vlindertuin Lewenborg	GCI	Bewonersorganisatie Lewenborg	GCI	3	3; 4; 5
Vlindertuin Lewenborg	GCI	Natuurmonumenten	Nonprofit organization	2	1
Vlindertuin Lewenborg	GCI	De Vlinderstichting	Nonprofit organization	2	1
Vlindertuin Lewenborg	GCI	Noorderpoort Groningen	Educational institution	1	6
Vlindertuin Lewenborg	GCI	Alfa-college Groningen	Educational institution	1	6

Vlindertuin Lewenborg	GCI	Werkgroep Stadsecologie IVN	Nonprofit organization	1	6
Vlindertuin Lewenborg	GCI	Stichting LeRoy	GCI	2	1; 6
Gemeente Groningen	Local government	Stichting Steenbreek Groningen	Nonprofit organization	5	3
Gemeente Groningen	Local government	Eetbaar Groningen	Nonprofit organization	2	1
Gemeente Groningen	Local government	WIJ Groningen	Nonprofit organization	4	3
Gemeente Groningen	Local government	MBO Terra Groningen	Educational institution	1	2
Gemeente Groningen	Local government	Groenstudio Schöne	Local company	2	3
Gemeente Groningen	Local government	Donker Groen	Local company	3	3
Gemeente Groningen	Local government	De Wilde Wegenbouw	Local company	3	3
Gemeente Groningen	Local government	Groenste buurt Noorderplantsoen	GCI	2	2
Gemeente Groningen	Local government	Werkgroep Stadsecologie IVN	Nonprofit organization	2	2
Gemeente Groningen	Local government	Sunny Selwerd	GCI	2	2
Gemeente Groningen	Local government	Lefier	Housing corporation	1	3
Gemeente Groningen	Local government	Nijestee	Housing corporation	1	3
Gemeente Groningen	Local government	Patrimonium	Housing corporation	1	3
Gemeente Groningen	Local government	SKSG	Other	2	3
Gemeente Groningen	Local government	Visio	Other	1	3
Oosterpoort Duurzaam	GCI	Gemeente Groningen	Local government	2	1
Oosterpoort Duurzaam	GCI	Stichting Steenbreek Groningen	Nonprofit organization	1	4
Oosterpoort Duurzaam	GCI	IVN Natuureducatie	Nonprofit organization	1	4
Oosterpoort Duurzaam	GCI	Rijksuniversiteit Groningen	Educational institution	2	1
Oosterpoort Duurzaam	GCI	TuinInDeStad	GCI	1	6
Buurtboomgaard Hoornse Meer	GCI	Gemeente Groningen	Local government	4	4
Buurtboomgaard Hoornse Meer	GCI	Landschapsbeheer Groningen	Nonprofit organization	1	1; 4
Buurtboomgaard Hoornse Meer	GCI	BNSP	Nonprofit organization	1	4
Buurtboomgaard Hoornse Meer	GCI	Oranjefonds	Nonprofit organization	2	4
Buurtboomgaard Hoornse Meer	GCI	MBO Terra Groningen	Educational institution	1	1; 4
Werkgroep Stadsecologie IVN	GCI	IVN Natuureducatie	Nonprofit organization	6	4

Appendix III: Interview guides (in Dutch)

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Interview guide green citizen initiatives

Introductie

Bespreek de volgende punten met de geïnterviewde:

- Doel en focus van het interview
- Toestemmingsformulier: wel/niet akkoord met geluidsopname, persoonlijk anoniem blijven, bewonersinitiatief anoniem blijven
- Formulier voorwaarden interview en rechten als geïnterviewde
- Het interview zal ongeveer één uur duren
- Vragen voorafgaand aan het interview?

(► Start opname hier)

Algemene vragen over het bewonersinitiatief

1. Kunt u mij vertellen over uw functie/rol binnen [naam bewonersinitiatief]?

   a. Welke activiteiten onderneemt u?
   b. Welke verantwoordelijkheden heeft u?
   c. Hoelang bent u al actief bij [naam bewonersinitiatief]?

2. Wat zijn de doelen/motivaties van [naam bewonersinitiatief]?
   a. Welke activiteiten of projecten worden er ondernomen bij [naam bewonersinitiatief]?

Ondersteuning van het bewonersinitiatief

3. Met welke partij(en) werkt [naam bewonersinitiatief] wel eens samen?
   a. Waarom, hoe vaak en op welke manier(en)?
   b. Hoe wordt deze samenwerking ervaren?

4. Hoe ervaart u de verhouding tussen de gemeente en [naam bewonersinitiatief]?
   a. In welke mate kunnen jullie zelf de regie over jullie activiteiten en doelen voeren?
   b. Welke rol neemt de gemeente aan ten opzichte van jullie projecten/activiteiten?

5. Van welke partij(en) krijgt [naam bewonersinitiatief] ondersteuning]?
   a. Op welke manier(en) en hoe wordt dit ervaren? (Bespreken rol i t/m xii)
      i. Financiële ondersteuning (financier)
      ii. Meedenken over hoe projecten aan bepaalde eisen kunnen voldoen en haalbaar kunnen worden (toetser)

iii. Doorgestuurd worden naar juiste persoon/organisatie (gids)
iv. Opbouwende kritiek en tips geven via persoonlijke gesprekken (kritische noot)
v. Jullie 'een spiegel voorhouden' via persoonlijke gesprekken (spiegel)
vi. Helpen met moeilijke (beleids)taal vertalen (tolk)
vii. Reclame/promotie voor jullie initiatief of activiteiten maken (P.R./Communicatiemedewerker)
viii. Andere bewoners aan jullie initiatief koppelen, of jullie initiatief koppelen aan andere organisaties (netwerkbouwer)
ix. Waardering voor jullie tonen/in het zonnetje zetten (spotlight)
x. Mogelijkheid om frustraties te uiten of gewoon een praatje te maken (klaagmuur/praatpaal)
xi. Persoonlijke betrokkenheid (supporter)
xii. Overige manieren/rollen van ondersteuning?

6. Wat zijn de struikelblokken waar [naam bewonersinitiatief] tegenaan loopt bij het uitvoeren van activiteiten?
   a. Hoe zou dit verbeterd kunnen worden?
   b. In welke mate zou steun van andere partijen kunnen helpen om deze problemen te verminderen, en hoe?

7. Op welke manieren zou de steun voor groene bewonersinitiatieven in Groningen verbeterd kunnen worden?
   a. Hoe zou dit uw bewonersinitiatief and andere initiatieven helpen?
   b. Welke partijen zouden een rol kunnen spelen in deze verbetering?

Afsluitende vragen

8. Hoe ziet u de toekomst van [naam bewonersinitiatief] voor u en waarom?
   a. Wat zijn de ambities voor de toekomst?

9. Indien nog niet ingevuld: Zou u mijn online enquête over het sociale netwerk aan partijen binnen het stedelijk groen in Groningen willen invullen?

_____

Interview guide Municipality of Groningen

Introductie

Bespreek de volgende punten met de geïnterviewde:

- Doel en focus van het interview
- Toestemmingsformulier: wel/niet akkoord met geluidsopname, persoonlijk anoniem blijven, bewonersinitiatief anoniem blijven
- Formulier voorwaarden interview en rechten als geïnterviewde
- Het interview zal ongeveer één uur duren
- Vragen voorafgaand aan het interview?

(► Start opname hier)

Algemene openingsvragen

1. Kunt u mij vertellen over uw functie bij de Gemeente Groningen?
   a. Hoe lang werkt u hier al?
   b. Op welke afdeling werkt u?
   c. Wat zijn uw taken en verantwoordelijkheden?

2. Welke partijen zijn, naast de Gemeente, ook betrokken bij het ontwikkelen en beheren van stedelijk groen in de stad Groningen?
   a. Op welke manier(en) werkt de Gemeente met deze partijen samen?
   b. Hoe wordt deze samenwerking ervaren?

Vragen over groene bewonersinitiatieven

3. Hoe zien jullie vanuit de Gemeente de rol van bewonersinitiatieven bij het ontwikkelen en beheren van stedelijk groen in Groningen?
   a. Hoe worden de acties van groene bewonersinitiatieven ervaren?
   b. Hoe verhoudt de Gemeente Groningen zich tot deze groene bewonersinitiatieven?

4. In welke mate probeert de Gemeente Groningen bewoners te **stimuleren** om zelf initiatieven op te starten voor groen in de stad Groningen?
   a. Waarom?
   b. Op welke manier(en)?

5. In welke mate probeert de Gemeente Groningen bewonersinitiatieven die al bestaan te ondersteunen in hun activiteiten? (**faciliteren**)
   a. Waarom?
   b. Op welke manier(en)?

6. Op welke manier(en) ondersteunt de Gemeente Groningen groene bewonersinitiatieven en waarom? (Bespreken aan de hand van praatplaat met 11 rollen, Figure 7)

a. Financiële ondersteuning (financier)
b. Meedenken over hoe projecten aan bepaalde eisen kunnen voldoen en haalbaar kunnen worden (toetser)
c. Doorsturen naar juiste persoon/organisatie (gids)
d. Opbouwende kritiek en tips geven via persoonlijke gesprekken (kritische noot)
e. De bewoners 'een spiegel voorhouden' via persoonlijke gesprekken (spiegel)
f. Helpen met moeilijke (beleids)taal vertalen (Tolk)
g. Reclame/promotie voor bewonersinitiatieven maken (P.R./Communicatiemedewerker)
h. Bewoners, bewonersinitiatieven en/of partijen aan elkaar koppelen (netwerkbouwer)
i. Waardering voor jullie tonen/in het zonnetje zetten (spotlight)
j. Mogelijkheid om frustraties te uiten of gewoon een praatje te maken (klaagmuur/praatpaal)
k. Persoonlijke betrokkenheid (supporter)
l. Overige manieren/rollen van ondersteuning?

7. Hoe denkt u dat het stimuleren van bewoners om zich in te zetten voor stedelijk groen door de Gemeente Groningen verbeterd zou kunnen worden?
    a. Hoe gaat dit ervoor zorgen dat bewoners meer bereid zijn om zich in te zetten voor stedelijk groen?
    b. Wat is er voor nodig om het stimuleren van groene bewonersinitiatieven door de Gemeente te verbeteren?

8. Hoe denkt u dat het faciliteren van al bestaande groene bewonersinitiatieven door de Gemeente Groningen verbeterd zou kunnen worden?
    a. Waarom?; Wat levert dit op voor de groene bewonersinitiatieven?
    b. Wat is er voor nodig om deze ondersteuning van groene bewonersinitiatieven door de Gemeente te verbeteren?

9. Hoe denkt u dat de rol van groene bewonersinitiatieven in Groningen zal veranderen in de toekomst?
    a. In hoeverre verwacht u dat het aantal groene bewonersinitiatieven zal veranderen?
    b. In hoeverre verwacht u dat bewonersinitiatieven meer of minder verantwoordelijkheden zullen dragen?
    c. Verwacht u dat de Gemeente groene bewonersinitiatieven meer zal loslaten of juist meer zal ondersteunen? En waarom?

Afsluitende vragen

10. Indien nog niet ingevuld: Zou u mijn online enquête over het sociale netwerk aan partijen binnen het stedelijk groen in Groningen willen invullen?

Interview guide nonprofit organizations

Introductie

Bespreek de volgende punten met de geïnterviewde:

- Doel en focus van het interview
- Toestemmingsformulier: wel/niet akkoord met geluidsopname, persoonlijk anoniem blijven, bewonersinitiatief anoniem blijven
- Formulier voorwaarden interview en rechten als geïnterviewde
- Het interview zal ongeveer één uur duren
- Vragen voorafgaand aan het interview?

(► Start opname hier)

Algemene openingsvragen

1. Kunt u mij vertellen over uw functie bij [naam organisatie]?
   a. Hoe lang werkt u hier al?
   b. Op welke afdeling werkt u?
   c. Wat zijn uw taken en verantwoordelijkheden?

2. Wat zijn de doelen/motivaties van [naam organisatie]?
   a. Op welke manier(en) zetten jullie je voor deze doelen in?
   b. Welke activiteiten/projecten worden er ondernomen door [naam organisatie]?

Vragen over groene bewonersinitiatieven

3. Met welke andere partij(en) werkt [naam organisatie] samen tijdens de inzet voor stedelijk groen in Groningen?
   a. Waarom, hoe vaak en op welke manier(en)?
   b. Hoe wordt deze samenwerking ervaren?

4. Hoe ziet [naam organisatie] de rol van bewonersinitiatieven bij het ontwikkelen en beheren van stedelijk groen in Groningen?
   a. Hoe worden de acties van groene bewonersinitiatieven ervaren?
   b. Hoe verhoudt [naam organisatie] zich tot deze groene bewonersinitiatieven?
   c. Aan welke groene bewonersinitiatieven biedt [naam organisatie] ondersteuning?

5. In welke mate probeert [naam organisatie] bewoners te **stimuleren** om zelf initiatieven op te starten voor groen in de stad Groningen?
   a. Waarom?
   b. Op welke manier(en)?

6. In welke mate probeert [naam organisatie] bewonersinitiatieven die al bestaan te ondersteunen in hun activiteiten? (**faciliteren**)
   a. Waarom?

     b. Op welke manier(en)?

7. Op welke manier(en) ondersteunt [naam organisatie] groene bewonersinitiatieven en waarom? (Bespreken aan de hand van praatplaat met 11 rollen, Figure 7)
     a. Financiële ondersteuning (financier)
     b. Meedenken over hoe projecten aan bepaalde eisen kunnen voldoen en haalbaar kunnen worden (toetser)
     c. Doorsturen naar juiste persoon/organisatie (gids)
     d. Opbouwende kritiek en tips geven via persoonlijke gesprekken (kritische noot)
     e. De bewoners 'een spiegel voorhouden' via persoonlijke gesprekken (spiegel)
     f. Helpen met moeilijke (beleids)taal vertalen (Tolk)
     g. Reclame/promotie voor bewonersinitiatieven maken (P.R./Communicatiemedewerker)
     h. Bewoners, bewonersinitiatieven en/of partijen aan elkaar koppelen (netwerkbouwer)
     i. Waardering voor jullie tonen/in het zonnetje zetten (spotlight)
     j. Mogelijkheid om frustraties te uiten of gewoon een praatje te maken (klaagmuur/praatpaal)
     k. Persoonlijke betrokkenheid (supporter)
     l. Overige manieren/rollen van ondersteuning?

8. Hoe denkt u dat het stimuleren van bewoners om zich in te zetten voor stedelijk groen door [naam organisatie] verbeterd zou kunnen worden?
     a. Hoe gaat dit ervoor zorgen dat bewoners meer bereid zijn om zich in te zetten voor stedelijk groen?
     b. Wat is er voor nodig om het stimuleren van groene bewonersinitiatieven door de Gemeente te verbeteren?

9. Hoe denkt u dat het faciliteren van al bestaande groene bewonersinitiatieven door [naam organisatie] verbeterd zou kunnen worden?
     a. Waarom?; Wat levert dit op voor de groene bewonersinitiatieven?
     b. Wat is er voor nodig om deze ondersteuning van groene bewonersinitiatieven door [naam organisatie] te verbeteren?

10. Hoe denkt u dat de rol van groene bewonersinitiatieven in Groningen zal veranderen in de toekomst?
     a. In hoeverre verwacht u dat het aantal groene bewonersinitiatieven zal veranderen?
     b. In hoeverre verwacht u dat bewonersinitiatieven meer of minder verantwoordelijkheden zullen dragen?
     c. Verwacht u dat [naam organisatie] groene bewonersinitiatieven meer zal loslaten of juist meer zal ondersteunen? En waarom?

11. Hoe denkt u dat de verhouding tussen [naam organisatie] en andere partijen die zich bezighouden met stedelijk groen zal veranderen in de toekomst en waarom?
     a. In hoeverre zullen verantwoordelijkheden veranderen?
     b. In hoeverre zullen samenwerkingen veranderen?

Afsluitende vragen

12. Indien nog niet ingevuld: Zou u mijn online enquête over het sociale netwerk aan partijen binnen het stedelijk groen in Groningen willen invullen?

Interview guide local companies

Introductie

Bespreek de volgende punten met de geïnterviewde:

- Doel en focus van het interview
- Toestemmingsformulier: wel/niet akkoord met geluidsopname, persoonlijk anoniem blijven, bewonersinitiatief anoniem blijven
- Formulier voorwaarden interview en rechten als geïnterviewde
- Het interview zal ongeveer één uur duren
- Vragen voorafgaand aan het interview?

(► Start opname hier)

Algemene openingsvragen

1. Kunt u mij vertellen over uw functie bij [naam bedrijf]?
    a. Hoe lang werkt u hier al?
    b. Op welke afdeling werkt u?
    c. Wat zijn uw taken en verantwoordelijkheden?

2. Wat zijn de doelen/motivaties van [naam bedrijf]?
    a. Op welke manier(en) zet het bedrijf zich voor deze doelen in?
    b. Welke activiteiten/projecten worden er ondernomen door [naam bedrijf]?

Vragen over groene bewonersinitiatieven

3. Met welke andere partij(en) werkt [naam bedrijf] samen tijdens de inzet voor stedelijk groen in Groningen?
    a. Waarom, hoe vaak en op welke manier(en)?
    b. Hoe wordt deze samenwerking ervaren?

4. Hoe ziet [naam bedrijf] de rol van bewonersinitiatieven bij het ontwikkelen en beheren van stedelijk groen in Groningen?
    a. Hoe verhoudt [naam bedrijf] zich tot deze groene bewonersinitiatieven?
    b. Met welke groene bewonersinitiatieven biedt [naam bedrijf] ondersteuning?
    c. Wat is voor [naam bedrijf] de waarde om ondersteuning te bieden aan groene bewonersinitiatieven?

5. In welke mate probeert [naam bedrijf] bewoners te **stimuleren** om zelf initiatieven op te starten voor groen in de stad Groningen?
    a. Waarom?

b. Op welke manier(en)?

6. In welke mate probeert [naam bedrijf] bewonersinitiatieven die al bestaan te ondersteunen in hun activiteiten? (**faciliteren**)
    a. Waarom?
    b. Op welke manier(en)?

7. Op welke manier(en) ondersteunt [naam bedrijf] groene bewonersinitiatieven en waarom? (Bespreken aan de hand van praatplaat met 11 rollen, Figure 7)
    a. Financiële ondersteuning (financier)
    b. Meedenken over hoe projecten aan bepaalde eisen kunnen voldoen en haalbaar kunnen worden (toetser)
    c. Doorsturen naar juiste persoon/organisatie (gids)
    d. Opbouwende kritiek en tips geven via persoonlijke gesprekken (kritische noot)
    e. De bewoners 'een spiegel voorhouden' via persoonlijke gesprekken (spiegel)
    f. Helpen met moeilijke (beleids)taal vertalen (Tolk)
    g. Reclame/promotie voor bewonersinitiatieven maken (P.R./Communicatiemedewerker)
    h. Bewoners, bewonersinitiatieven en/of partijen aan elkaar koppelen (netwerkbouwer)
    i. Waardering voor jullie tonen/in het zonnetje zetten (spotlight)
    j. Mogelijkheid om frustraties te uiten of gewoon een praatje te maken (klaagmuur/praatpaal)
    k. Persoonlijke betrokkenheid (supporter)
    l. Overige manieren/rollen van ondersteuning?

8. Hoe denkt u dat het stimuleren van bewoners om zich in te zetten voor stedelijk groen verbeterd zou kunnen worden?
    a. Hoe gaat dit ervoor zorgen dat bewoners meer bereid zijn om zich in te zetten voor stedelijk groen?
    b. Welke rol zouden lokale bedrijven, zoals uw bedrijf, kunnen spelen bij het verbeteren van het stimuleren van groene bewonersinitiatieven?

9. Hoe denkt u dat het faciliteren van al bestaande groene bewonersinitiatieven in Groningen verbeterd zou kunnen worden?
    a. Waarom?; Wat levert dit op voor de groene bewonersinitiatieven?
    b. Welke rol zouden lokale bedrijven, zoals uw bedrijf, kunnen spelen bij het verbeteren van het faciliteren van groene bewonersinitiatieven?

10. Hoe denkt u dat de rol van groene bewonersinitiatieven in Groningen zal veranderen in de toekomst?
    a. In hoeverre verwacht u dat het aantal groene bewonersinitiatieven zal veranderen?
    b. In hoeverre verwacht u dat bewonersinitiatieven meer of minder verantwoordelijkheden zullen dragen?

c. Verwacht u dat [naam bedrijf] groene bewonersinitiatieven meer zal loslaten of juist meer zal ondersteunen? En waarom?

11. Hoe denkt u dat de verhouding tussen [naam bedrijf] en andere partijen die zich bezighouden met stedelijk groen zal veranderen in de toekomst en waarom?
    a. In hoeverre zullen verantwoordelijkheden veranderen?
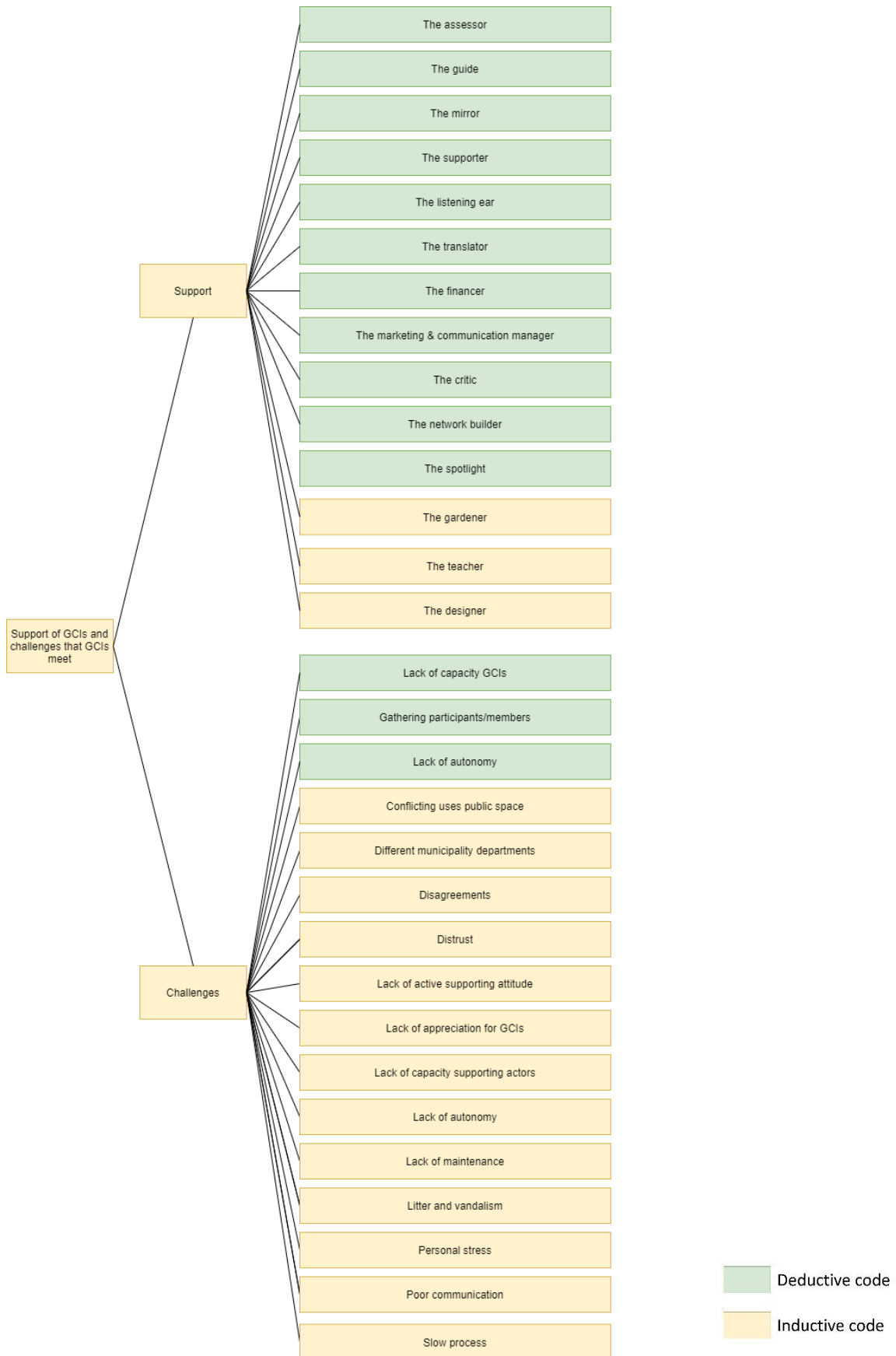   b. In hoeverre zullen samenwerkingen veranderen?

Afsluitende vragen

12. Indien nog niet ingevuld: Zou u mijn online enquête over het sociale netwerk aan partijen binnen het stedelijk groen in Groningen willen invullen?

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Appendix IV: Transcripts of the interviews

The transcripts of the interview are stored by the researcher.

Appendix V: Codebook

Appendix VI: Municipality's requirements and procedure for initiating a GCI

Requirements: "The project can be terminated if one of the requirements is not followed" (Municipality of Groningen, 2010, p.9)**:**

Location/greenery:
- The greenspace is part of the secondary green structure;
- The land stays in property of the Municipality;
- The greenery may not become an extension of a private garden;
- The greenery should retain a public character;
- Municipal services and companies should always have access to their cables, pipes and sewerage system. It is possible that greenery should be removed for maintenance. The Municipality is not responsible for damage to greenery caused by maintenance to cables, pipes, and sewerage systems;

Maintenance:
- The usage of pesticides and fertilizers is not allowed;
- Closed surfacing (e.g. asphalt or concrete) may not be applied;

Project characteristics:
- The project should be small scale and on the neighborhood level;
- A minimum of three people file the request for a GCI and actively want to take part in it;

Local support:
- The activities related to the GCI should be announced to all local residents/stakeholders;
- There should be enough public support for a change in the design of the public space: a multitude of the surrounding residents should not object to the changes;

Distribution of responsiblities:
- The citizens themselves take care of the generation of the project. The Municipality creates frameworks and communicates them in advance to the citizens;
- Any trees that are present continue to be maintained by the Municipality;

Procedure:
- Residents fill in a request form. This form is assessed by the coordinator green citizen participation. The Municipality can deny a request if it does not meet the above-mentioned requirements;
- In consultation with the coordinator green citizen participation, a planting design is created. The coordinator gives advice and should approve the plan;
- One of the citizens is appointed as the contact person for the Municipality;
- The coordinator green citizen participation is the contact person for the citizens;
- A minimum of three citizens sign the "green participation contract";
- The citizens buy the plants in consultation with the Municipality. The Municipality makes a budget available for the citizens for this purpose. The Municipality manages the budget;
- The plants are planted by the citizens themselves;

- The Municipality takes the greenspace out of their own maintenance plan;
- The coordinator green citizen participation has contact with the citizens at least once a year about the progress and agreements.

Appendix VII: Social Network Maps
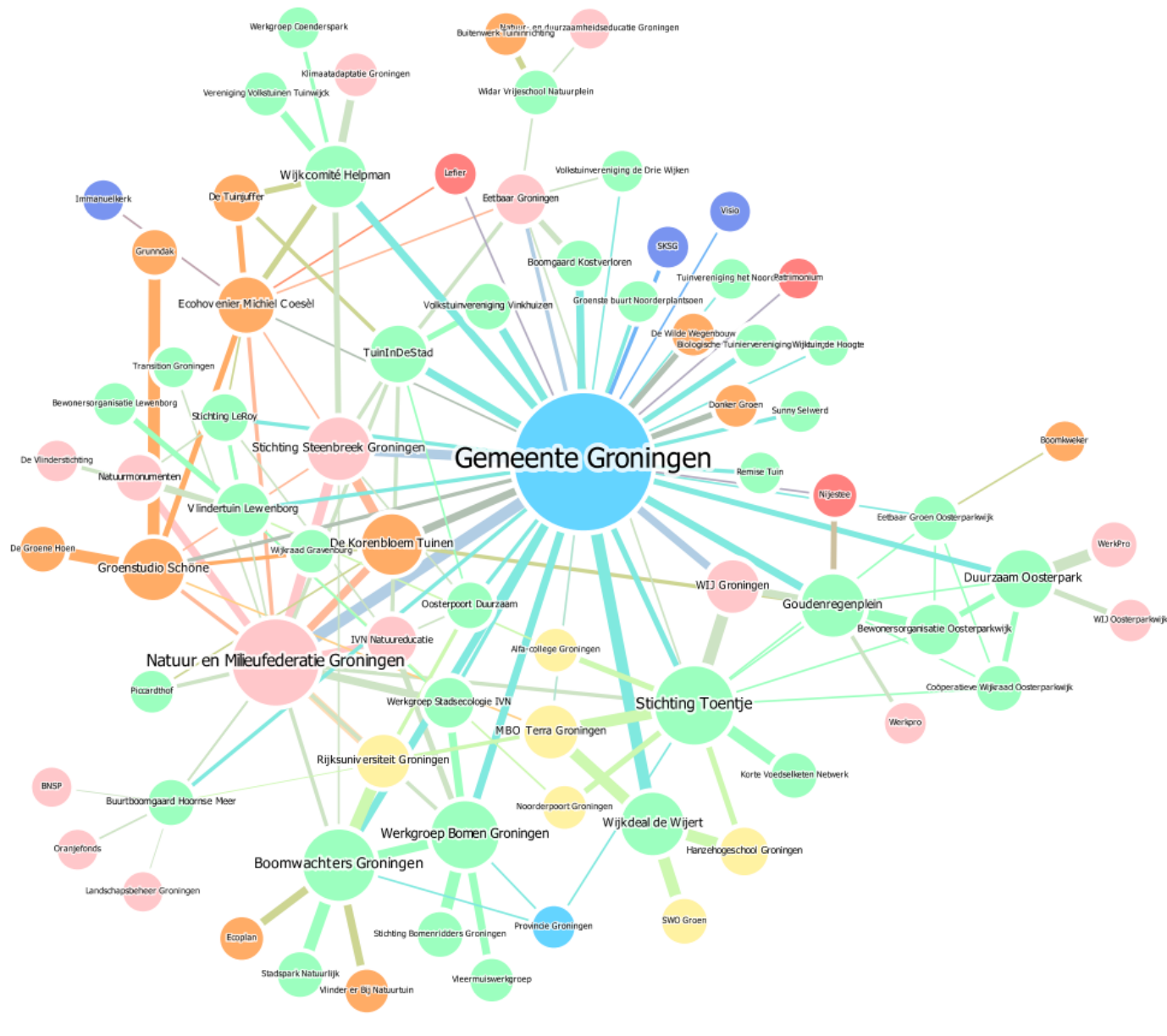
Figure 28: The social network of actors involved with urban greenspace management in Groningen.
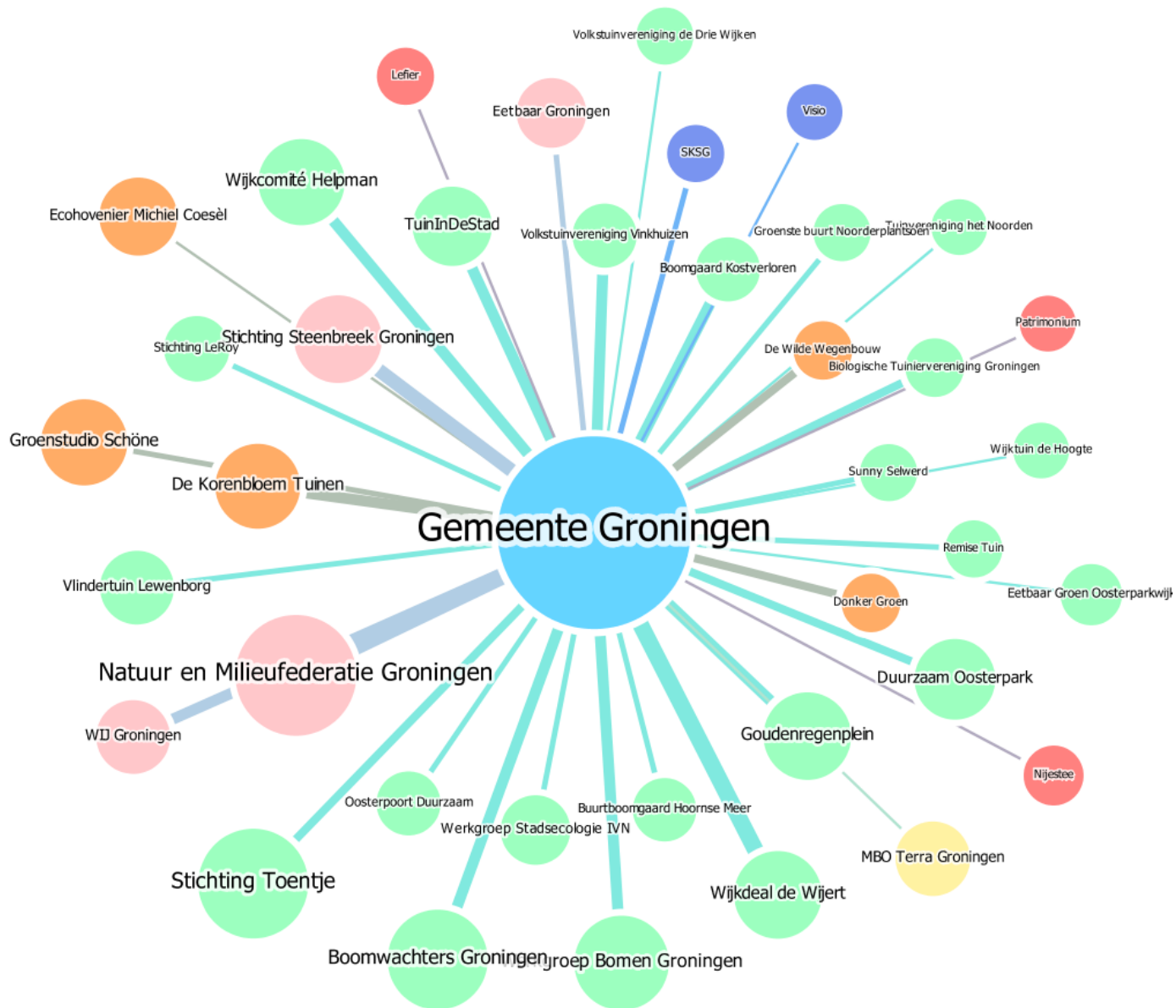
Figure 29: Interactions of the Municipality of Groningen. Source: Author.

Appendix VIII: Code-Document tables of roles (in-depth interviews)

	Edible green Oosterparkwijk	Buurtboomgaard Hoornse Meer	Goudenregenplein	TuinInDeStad	Municipality of Groningen	IVN Natuureducatie	NMG	Stichting Steenbreek Groningen	Ecohovenier Michiel Coesèl	De Korenbloem, Tuinen met Visie	Total
The assessor (instrumental facilitation)	1	0	0	1	4	1	0	3	0	0	**10**
The critic (instrumental stimulation)	0	0	5	0	4	0	0	1	0	0	**10**
The financer (instrumental facilitation)	4	6	5	5	5	4	0	4	0	0	**33**
The guide (instrumental facilitation)	0	0	1	0	1	1	3	2	0	1	**9**

The listening ear (personal stimulation)	0	0	0	1	6	7	3	3	0	0	**20**
The marketing & communication manager (instrumental stimulation)	3	0	4	0	4	6	9	5	3	2	**36**
The mirror (personal facilitation)	2	0	3	0	4	1	0	2	1	1	**14**
The network builder (personal stimulation)	0	2	6	1	3	7	9	2	0	0	**30**

The spotlight (personal stimulation)	3	5	6	3	1	2	2	5	0	1	**28**
The supporter (personal facilitation)	4	2	4	4	5	2	0	1	0	0	**22**
The translator (instrumental facilitation)	1	0	1	0	2	1	1	2	0	0	**8**
The designer (instrumental facilitation)	0	2	1	0	0	1	0	0	2	5	**11**
The teacher (personal facilitation)	0	4	0	0	2	4	4	2	8	7	**31**

The gardener (instrumental facilitation)	1	7	3	0	8	4	1	7	5	0	36
Total	**19**	**28**	**39**	**15**	**49**	**41**	**32**	**39**	**19**	**17**	

Table 14: Cross-tabulation of the number of times that support roles were mentioned per interview with GCIs and professional actors. A white box indicates that the role was not indicated by the corresponding actor. Source: Author.

Appendix IX: Code-Document tables of challenges (in-depth interviews)

	Edible green Oosterparkwijk	Buurtboomgaard Hoornse Meer	Goudenregenplein	TuinInDeStad	Municipality	IVN Natuureducatie	Natuur en Milieufederatie Groningen	Stichting Steenbreek Groningen	Ecohovenier Michiel Coesèl	De Korenbloem Tuinen met Visie	Total
Different municipality departments	0	0	3	12	0	0	0	0	0	0	**15**
Lack of active supporting attitude	1	2	1	1	0	0	0	1	0	0	**6**
Lack of appreciation for GCIs	1	0	2	13	0	0	0	0	0	0	**16**
Lack of capacity supporting actors	0	2	2	0	3	0	0	4	0	0	**11**

Lack of control	5	0	5	11	1	0	0	0	0	0	22
Poor communication	15	0	0	0	0	0	0	0	0	0	15
Slow process	7	0	0	0	0	0	0	0	0	0	7
Total	**30**	**4**	**13**	**38**	**4**	**0**	**0**	**5**	**0**	**0**	

Table 15: Cross-tabulation of the number of times that challenges related to support of green citizen initiatives were mentioned per in-depth interview. A grey box indicates that the challenge was mentioned at least once by the corresponding actor. Source: Author.

	Edible green Oosterparkwijk	Buurtboomgaard Hoornse Meer	Goudenregenplein	TuinInDeStad	Municipality	IVN Natuureducatie	Natuur en Milieufederatie Groningen	Stichting Steenbreek Groningen	Ecohovenier Michiel Coesèl	De Korenbloem Tuinen met Visie	Total	Score (total * N of actors that mentioned the issue
Conflicting uses public space	2	1	1	9	1	0	1	0	2	0	**17**	
Disagreements	0	1	0	0	5	2	0	0	6	0	**14**	
Distrust	0	0	3	2	2	0	0	0	1	0	**8**	
Gathering participants	0	6	19	0	0	0	0	0	0	0	**25**	
Lack of capacity GCIs	3	3	6	1	4	0	0	3	2	2	**24**	
Lack of maintenance	0	0	0	0	1	0	0	0	4	0	**5**	

Litter and vandalism	0	2	1	0	0	0	0	0	0	0	**3**
Personal stress	1	0	2	3	0	0	0	0	0	0	**6**
Total	**6**	**13**	**32**	**16**	**15**	**2**	**1**	**3**	**18**	**6**	

Table 16: Cross-tabulation of the number of times that challenges related to green citizen initiatives were mentioned per in-depth interview. A grey box indicates that the challenge was mentioned at least once by the corresponding actor. Source: Author.