Green participation as a strategy to tackle health inequities

Exploring the perspectives on engagement of people with a low socioeconomic status in green citizen participation

MSc Thesis

Leonie Veltman

WAGENINGENUR
For quality of life

Green participation as a strategy to tackle health inequities

Exploring the perspectives on engagement of people with a low socioeconomic status in green citizen participation

Author: Leonie Veltman

Registration number: 941114865080

Supervisors: Dr. Ir. Lenneke Vaandrager and Roald Pijpker, MSc

Master programme: Communication, Health and Life sciences
Specialization: Health and Society

Chair group: Health and Society

Course code: HSO-80336

September 2018 – March 2019

WAGENINGEN UR
For quality of life

Preface

This master thesis is written as part of my graduation from the master specialisation Health and Society at Wageningen University. The final product is established during a six months process with a lot of ups and downs. Conducting a scientific research on my own gave me the opportunity to develop my scientific- and professional skills. However, I could not write this thesis without the help and support of some involved people, which I would like to thank.

First, I would like to thank my supervisors Lenneke Vaandrager and Roald Pijpker for their useful feedback and guidance throughout this process. After every of our meetings I had new inspiration and ideas that helped me to improve my thesis.

Besides that, I would like to thank the members of the project Partigan for involving me in parts of their research. Because of them, I got some interesting opportunities for collection of relevant data which I would not have got on my own. Besides that, it was very informative to attend some of their meetings.

Also, many thanks to all other people who made a contribution to my thesis, especially the respondents of the interviews and the professionals I have spoken with. Their input helped me to get insight into the phenomenon of green citizen participation and because of that, I was able to write this thesis.

Finally, I would like to thank my boyfriend Wouter for always listening to my thesis struggles and support me where needed, especially after my accident.

I hope you enjoy reading this thesis,

Leonie Veltman

Abstract

Background: *Nature* has a lot of positive health outcomes, but low socioeconomic status neighbourhoods show a decrease in both quality and quantity of green areas which causes a health gap among people with a low socioeconomic status. Besides that, *citizen participation* is an increasingly acknowledged topic because it could help to unravel needs and preferences of people and it stimulates feelings of control and responsibility. Combining both topics lead to the concept of *green citizen participation* [GCP], which is defined as all kind of citizen participation related to nature, such as planning, realizing, developing, managing or protecting of green areas. However, almost no studies are known about the perspectives of citizens and other relevant stakeholders on engagement in GCP, while this is considered a strategy to tackle health inequities. Special attention is given to the perspectives of people with a low socioeconomic status, because these people are often left out in green citizen participation projects.

Objective: The aim of this study was to gain insight into perspectives on engagement of people with a low socioeconomic status in GCP by identifying facilitators and barriers for engagement in GCP.

Methods: The research was partly done together with the project Partigan in the Dutch cities Arnhem and Nijmegen. Four methods with different stakeholders were done, namely: 1) narrative review that synthesized 11 promising approaches for involving people with a low socioeconomic status in green citizen participation, 2) 15 semi-structured interviews with volunteers of green initiatives about motivations and experiences of their initiative, 3) four unstructured interviews with different professionals about their experience with green citizen participation and the involvement of people with a low socioeconomic status, 4) observations of two meetings with coordinators of green initiatives and a municipality about success factors and failures of green citizen participation.

Results: An important finding was the distinction between types of GCP namely *green initiatives* and *green activities*. Green initiatives are more participative compared to green activities and therefore other facilitators and barriers are identified for both types. The *creation of a stimulating environment* is identified as a finding that capture most of the important facilitators. For green initiatives, such an environment must fit with the needs and preferences of people because volunteers of green initiatives are sensitive for elements that could enrich their lives. Besides that, collaborations with other initiatives or organisations are important, but there must be little interference from local governments. Contrasting, green activities need an environment with attractive and innovative involvement strategies to engage people in green citizen participation. Also, support from local governments or welfare organisations is needed, aside of collaborations with other green activities. A *lack of resources* and *politics & policies* are two important findings that hinder engagement in GCP. A lack of time is identified for both green initiatives and -activities and is about the busy lives of people and the time it takes to start an activity/initiative. For green initiatives, politics and policies is considered a barrier because of communication problems with local governments, while green activities perceive problems with the responsibility for taking care of public green areas.

Conclusion: Green citizen participation is considered a complex phenomenon that needs further research, although this study is considered an important first step in the promotion of green citizen participation among people with a low socioeconomic status.

Keywords: citizen participation – citizen initiatives - green initiatives – green activities – low socioeconomic status – levels of participation – involvement

Table of Contents

1. Introduction

1.1 Background

In recent decades the burden of non-communicable diseases [NCD] such as obesity, diabetes or cardiovascular disease [CVD] has increased considerably from 46% in 2001 towards an expected 57% in 2020 (World Health Organization [WHO], 2014; WHO, 2018). Besides that, 71% of all deaths worldwide are due to a NCD (WHO, 2018). Risk factors of NCDs are often due to complex interactions between individual determinants and determinants in both the physical and social environment (Giles-Corti & Donovan, 2002; Sallis, Owen & Fisher, 2015). The natural environment has an important role in this because interactions between individuals and environmental exposures such as radiation, viruses or natural hazards could cause NCDs or even death (Frumkin, 2001; Hartig, Mitchell, De Vries & Frumkin, 2014). However, other aspects of the natural environment have a positive influence on health such as clean air, landscapes or animals (Frumkin, 2001). As a response, there is a growing body of literature about the association between nature and health (outcomes). Although a lot of definitions for 'nature' exist in literature, the one used in this study is: *"nature refers to any single element of the natural environment (such as plants, animals, soil, water or air) and includes domestic and companion animals, as well as cultivated pot plants"* (Maller, Townsend, Pryor, Brown & St Leger, 2006). The definition includes both cultivated or designed nature (e.g. parks), as well as more raw nature. In literature, the term 'green spaces' is often used as a synonym for nature, although no clear definition of it is known according to a review of Taylor and Hochuli (2017). Nevertheless, 'nature' and 'green spaces' will be used interchangeably in this study.

A lot of studies report positive associations between nature and health. A review from Gascon et al. (2016) reported a small (5%) but significant association between mortality of CVD and green areas. Another review by Van den Berg, Wendel-Vos, Van Poppel, Kemper, Van Mechelen and Maas (2015) found significant associations between quantity of green spaces and all-cause mortality. Also, it was reported that 10% more green could relieve a number of symptoms comparable with a decrease in life-expectancy of 5 years (De Vries, Verheij, Groenewegen & Spreeuwenberg, 2003). Another study showed the relation between quantity of green space and self-perceived health. Only 10.2% of residents feel unhealthy in areas with 90% green, compared to 15.5% of residents in areas with 10% green (Maas, Verheij, Groenewegen, De Vries & Spreeuwenberg, 2006). Besides that, nature seems to have a positive association with mental health and stress. Improvements in natural elements lead to a significant decrease in depressive symptoms among adults (Gubbels et al., 2016), lower self-perceived stress (Pun, Manjourides & Suh, 2018) and a reduced risk of sleep shortness (Astell-Burt, Feng & Kolt, 2013). Although it is plausible that the association between nature and health indeed exists, the exact contribution of nature to health outcomes is unclear because many factors which are hard to control in real-life settings could have an influence (Lee, Jordan & Horsley, 2015; Van den Berg, 2017) such as living- or working conditions (RIVM, 2011).

Nevertheless, it is likely that time spent with or within green spaces have -in general-positive health outcomes, although a lot of (urban) areas show a decrease in both quality and quantity of green (Haaland & Van den Bosch, 2015) especially in low socioeconomic status [SES] neighbourhoods (Hoffimann, Barros & Ribeiro, 2017). This is a reason for concern because sufficient availability of good quality green spaces nearby home is

important for people with a low SES, as explained by three mechanisms. First, it is assumed that people with a low SES spend more time in and around their homes (De Vries et al., 2003; Maas et al., 2006), meaning that they are more exposed to their living environment and thus to green spaces. Second, poor financial situations could decrease the possibilities to visit green spaces outside the living environment, causing more dependency of local green spaces (De Vries et al., 2003). Third, people with a low SES have in general a poorer health, which indicate that they could benefit more from green compared to people with a higher SES and a better health (De Vries et al., 2003). Besides that, Mitchell and Popham (2008) reported lower health inequalities related to income differences in greener areas. The incidence rate ratio for all-cause mortality for poor people compared to rich people was 1.93 in areas with the least green spaces, and 1.43 in areas with the most green spaces (Mitchell & Popham, 2008). For circulatory diseases this was respectively 2.19 and 1.54. Therefore, it is justified to talk here about a *health inequity* between people with a low SES and people with a high SES. The quantity and quality of green spaces is unequally distributed over both groups, which creates a health gap among low SES people.

This health inequity is a serious problem which requires attention from science and policy makers. Until very recently, implementation of green spaces in cities had low priority because of limited budgets and densification of cities (Haaland & Van den Bosch, 2015; Kabisch, Strohbach, Haase & Kronenberg, 2016). However, because of increasing evidence of the association between nature and health, especially for vulnerable groups (Hartig et al., 2014; Maas et al., 2006), implementation of green spaces gets more attention in urban planning nowadays (Haaland & Van den Bosch, 2015). Besides that, involvement of citizens in the process of urban green development and management is becoming increasingly acknowledged (Haaland & Van den Bosch, 2015; Seymoar, Ballantyne & Pearson, 2010; Sugiyama, Carver, Koohsari & Veitch, 2018) because it stimulates feelings of control and responsibility, leads to more effective interventions, enhance appreciation of the living environment (Eldredge et al., 2016; Resnik, Elliott & Miller, 2015) and it helps to unravel needs and preferences about green spaces (Eldredge et al., 2016; Sugiyama et al., 2018). It is important that needs and preferences of people are known, because several studies indicate that *quality* of green spaces could be more important than *quantity* (Gascon et al., 2016; Haaland & Van den Bosch, 2015; Hartig et al., 2014; Hoffimann et al., 2017; Sugiyama et al., 2018). It is assumed that a high-quality green space which involves needs and preferences of people could be used more often. In addition, involvement of citizens may go beyond identifying needs and preferences. It is hypothesized that people with no or less experience with 'green' find it difficult to express their perspectives on it. Therefore, it is argued that active participation (e.g. participating in green activities) is important for the creation of nature experiences and perspectives about green.

1.2 Problem statement & research question

The importance of 'green' as well as the importance of citizen involvement in green development/activities are explained. Therefore, it is important to get more insight in this so-called green citizen participation [GCP] -which could be defined as all kind of citizen participation related to nature, such as planning, realizing, developing, managing or protecting of green areas (Mattijssen, Buijs, Elands & Van Dam, 2015). However, almost no studies are known about perspectives of citizens and other relevant stakeholders (e.g. professionals) on engagement in GCP, while it is considered a first step in tackling the

health inequity between people with a high- and low SES, related to green spaces (**Figure 1**). Insights into perspectives on engagement in GCP could be used to improve strategies that stimulate involvement in GCP. This could lead to an increased use of/contact with green spaces and therefore better health outcomes. In the end this can help to tackle the health inequity.

In order to reduce the health gap, special attention must be given to the perspectives of *people with a low SES*. It is known that most (green) citizen participation projects include predominantly higher educated people (Irvin & Stansbury, 2004; Lee & Schachter, 2018), which indicates that lower educated people are left out. Therefore, stimulation of GCP without including the perspectives of people with a low SES is ineffective because only the same (higher educated) people more often participate (Dreijerink, Kruize & Van Kamp, 2009). This could strengthen the health inequity even further, because people with a high SES could then participate in more GCP projects in their already green areas, while people with a low SES stay behind (Marijnissen, 2018). It is therefore necessary to understand the perspectives of people with a low SES. This study is explorative in nature and therefore the focus is not solely on perspectives of people with a low SES, but also on perspectives of relevant stakeholders -such as professionals- on the engagement of people with a low SES in GCP.
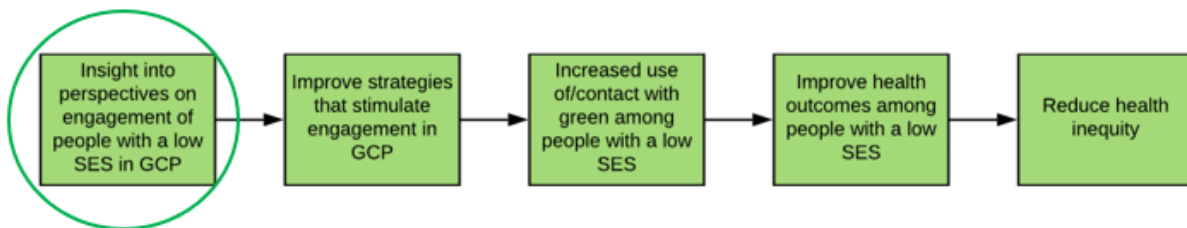

Figure 1. Assumed aetiology of the relation between 'perspective on GCP' and 'health inequity'.

The aim of this study is thus to get insight into the perspectives of people with a low SES and relevant stakeholders on engagement of people with a low SES in GCP. The relevant stakeholders will be explained in more detail in the methods section. *Perspectives* could be operationalized by identifying both *facilitators* and *barriers* for involvement in GCP. Although the terms 'facilitators' and 'barriers' are intuitively associated with external factors outside the person, in this study internal factors such as needs and preferences are also included. *Citizen participation* is a widely used term with a lot of definitions and interpretations (e.g. Horghagen et al., 2018; Michels & De Graaf, 2010; Voorberg, Bekkers & Tummers, 2015) but the one used here is: "*a process in which individuals take part in decision making in the institutions, programs and environments that affect them*" (Wandersman & Florin, 2000). Besides that, '*participation*' could be distinguished on different levels, from nonparticipation till complete control by citizens. Participation in this study is everything between Consultation and Citizen Control as indicated by Arnstein's Ladder of Citizen Participation (**Figure 2**), because these are the levels in which individuals actively take part in decision making (Arnstein, 1969). Although there are many models of participation, Arnstein's ladder was chosen because it is the most frequently cited one. Besides that, the focus of this study is on *adults* (age 18+) because research among children asks for a slightly different and difficult approach, especially concerning to communication (Christensen & James, 2008).

This leads to the following research question:

What facilitators and barriers influence engagement of adult people with a low SES in green citizen participation?
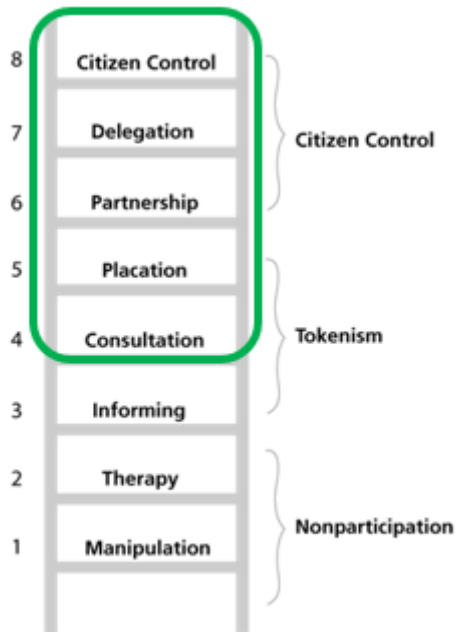
Figure 2. Arnstein's Ladder of Citizen Participation. Adapted from Arnstein, S.R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35*(4), 216-224.

2. Theoretical framework

2.1 Citizen participation

2.1.1 Framework of citizen participation

Although there are many determinants of citizen participation known in literature, a study done by Phang and Kankanhalli (2005) developed a framework that consists of five types of factors which captured most of these determinants. The classes as indicated in the framework are: incentive-related factors, resource-related factors, personal belief factors, social capital factors and political institution factors. The framework was originally developed to determine factors that influence citizen participation in E-consultation. E-consultation is a policy instrument in which the government defines issues, sets questions and manages the process, while citizens can give their views and opinions online (Phang & Kankanhalli, 2005). However, the paper of Phang and Kankanhalli (2005) makes a clear distinction between factors in the context of E-consultation and general factors for citizen participation, which makes the framework also suitable for other contexts. Besides that, the framework has a well-grounded theoretical basis because it is based on five frequently cited theories of citizen participation (Coleman, 1988; Green & Shapiro, 1996; Parry, Moyser & Day, 1992; Verba, Schlozman & Brady, 1995; Whitely & Seyd, 1996) which are synthesized. For these reasons it is decided to use an adapted version (exclusion of the E-consultation factors) of the framework here (**Figure 3**), which is explained in more detail below. Although all determinants could influence involvement in citizen participation, it must be said that for each determinant its influence depends on the topic in which citizens participate.
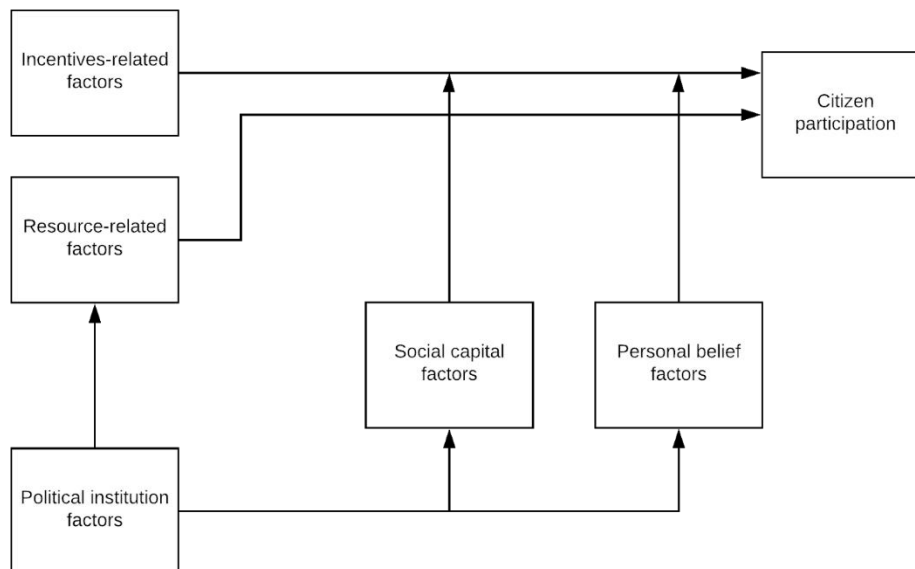

Figure 3. Framework for citizen participation. Adapted from Phang, C.W., & Kankanhalli, A. (2005). A research framework for citizen participation via E-consultation. *AMCIS 2005 Proceedings,* 2003-2010.

Incentives-related factors
Incentives here refer to the drivers for engagement in citizen participation and could be motivations or stimulations whether or not to participate (Bolleyer & Weiler, 2018). Different types of incentives could be distinguished, such as material incentives (tangible rewards that are often monetary), solidary incentives (intangible rewards that have to do with sociability or status) or purposive incentives (intangible rewards related to a specific goal) (Bolleyer & Weiler, 2018). Besides that, people could have incentives developed by themselves, but they could also have incentives that are influenced by people around them (e.g. family or friends) (Phang & Kankanhalli, 2005). Lastly, incentives could be related to intrinsic motivation (i.e. within the person) or extrinsic motivation (outside the person) (Dreijerink et al., 2009). However, most incentives are influenced by social capital factors or personal belief factors as is described below. There are however some isolated incentives that could directly influence involvement in citizen participation, such as *altruistic reasons*, *self-fulfilment* or *appreciation* by others (Van Houwelingen, Boele & Dekker, 2014).

Resource-related factors
Resource-related factors refer to individual resources and skills such as *money, time, educational level* or *civic skills* -which are organizational or communicational abilities (Phang & Kankanhalli, 2005). Individuals with high levels of organizational skills (Foster-Fishman, Pierce & Van Egeren, 2009), high income and -educational level and home-ownership (Kalkbrenner & Roosen, 2016) are more likely to be involved in citizen participation. As a result, individuals with less knowledge or skills perceive this as a barrier for involvement (Aalbers, Kamphorst & Langers, 2018). Another facilitator is individuals that have *feelings of ownership* (Seymoar et al., 2010). These people are more likely to engage in citizen participation, because they feel responsible and connected towards their environment (Seymoar et al, 2010; Van Houwelingen et al., 2014). However, there are also some barriers for involvement in citizen participation related to resources. *Professionals* could be a barrier because of their knowledge, expertise and skills (Roberts, 2004). For citizens it is difficult to compete with the resources of professionals and therefore they could avoid engagement in citizen participation (Roberts, 2004). This principle also applies for groups of people. In addition, *financial investments* could be a barrier, especially for initial financing because new initiatives always need money (Kalkbrenner & Roosen, 2016). Lastly, *time* could be a barrier because individuals could be too busy for engagement in citizen participation (Irvin & Stansbury, 2004).

Personal belief factors
A belief can be defined as an idea that an individual holds as being true, and it could be influenced by a person's environment (Richardson, 1996). In this context, personal beliefs could be seen as beliefs about engagement in citizen participation (Phang & Kankanhalli, 2005). For example, individuals who have *hope for a better future* could find it worthwhile to be involved in change efforts such as citizen participation (Foster-Fishman et al., 2009). Besides that, holding the belief that individuals -in a group- have the *capacity to act* and to make a difference also increase engagement in citizen participation (Foster-Fishman et al., 2009). However, some individuals believe it is the *responsibility of the government* to make (policy) decisions (Dreijerink et al., 2009). As a result, these people often have negative attitudes towards citizen participation. Perceptions about *problems in the neighbourhood* (such as crime or drugs) could be both

a facilitator and barrier for citizen participation. This is because some residents perceive problems as a reason to participate because they want to solve it, while other residents are scared and want to avoid or ignore the problems (Foster-Fishman, 2009). Besides that, people often make *cost-benefit analyses*, which is also considered as both a facilitator or barrier for citizen participation. Higher perceived costs compared to the benefits for involvement in citizen participation is assumed to be a barrier, while higher perceived benefits compared to costs could be a facilitator (Kalkbrenner & Roosen, 2016). This is in line with Dreijerink et al. (2009) who states that people often participate because of own interests.

Social capital factors
Social capital means that people invest in social relations because they expect returns from it (Dubos, 2017). It could be defined as *"connections among individuals that form social networks, and the resulting norms of reciprocity and trustworthiness arising from the networks"* (Putnam, 1993). Here it is about the influence of social networks, reciprocity and trust on engagement in citizen participation (Phang & Kankanhalli, 2005). For example, neighbourhoods with a strong *sense of community* are more likely to involve in citizen participation (Foster-Fishman et al., 2009; Kalkbrenner & Roosen, 2016). Sense of community means the extent to which people feel they belong to their neighbourhood and the interdependence of each other (Foster-Fishman et al., 2009). In addition, *trust* and strong identification with communities or institutions could also facilitate citizen participation (Kalkbrenner & Roosen, 2016). Trust is important for collaboration and establishing relationships and therefore strengthen the sense of community (Kalkbrenner & Roosen, 2016; Van Houwelingen et al., 2014). Also, *social norms* could influence the involvement in citizen participation. This is because people are sensitive for norms established by respected others (or the community) and as a result they engage in the behaviour as described by the norm (Kalkbrenner & Roosen, 2016). However, this implies that it depends on the content of the social norm whether it is a facilitator or a barrier for engagement in citizen participation. Lastly, *peer-to-peer learning* in citizen participation is also an important element to attract more people. It means that people who are already in citizen participation share their knowledge or skills with outsiders to spread it even further (Seymoar et al., 2010). As a result, more people are engaged in citizen participation. The mechanism behind this peer-to-peer learning is trust, which is easier to build and maintain among equals (Seymoar et al., 2010).

Political institution factors
Political institution factors describe factors that are mainly determined by politics, such as a supportive government or availability of infrastructure that facilitates citizen participation (Phang & Kankanhalli, 2005). It is about the settings in which citizen participation takes place. Most of the time citizen participation has to do with local politics such as those of municipalities (Aalbers et al., 2018). The *creation of an environment* in which the municipalities are open to citizen involvement is one of the most important facilitators (Aalberts et al., 2018). Lack of such an environment causes indifference because people do not see the value of engagement in citizen participation (Porumbescu, 2017). Ironically enough, the lack of such a stimulating environment could also work as a facilitator for some people, because citizens distrust politics and wanted their voices heard (Roberts, 2004; Van Houwelingen et al., 2014). As a result, they could engage in citizen participation. A stimulating environment could include the appointment of a *contact person* within the municipality in order to avoid the so-called 'from pillar to post' issues (Aalbers et al., 2018). Also, the municipality must *think along* about

objectives, capacity and different roles in citizen participation projects (Van Houwelingen et al., 2014) and be *transparent* on the decision-making process (Irvin & Stansbury, 2004). In addition, *financial support* and the stimulation of a *learning environment* are also important conditions to attract citizens (Aalbers et al., 2018). An assumed barrier for involvement could be the *dominance of professionals or scientists*, because citizens do not feel free to express their opinion (Dreijerink et al., 2009).

Relations between the different components
The different components of the framework are interrelated with each other. Political institution factors are assumed to influence resource-related factors, social capital factors and personal belief factors (Phang & Kankanhalli, 2005). This is because politics create settings in which citizen participation could -or could not- be realised. According to the ecological perspective, political institution factors are considered as an outside layer (**Figure 4**) that influences everything within it, such as individual or social determinants. The influence of social capital factors on incentives-related factors could be explained by the fact that the presence of social capital factors such as trust or reciprocity may strengthen the incentives-related factors (Phang & Kankanhalli, 2005). For example, if there is a lot of trust between two people, it is more likely that person 1 will engage in citizen participation if person 2 asked to do so, because person 1 trusts person 2 and believes it is asked for a good reason. This gives a stronger incentive to person 1 for engagement in citizen participation. The same principle could be applied for the influence of personal belief factors on incentive-related factors. For example, if a person has a strong positive attitude towards nature conservation, his incentive to engage in a nature management program would be stronger -if the type of management corresponds to his beliefs about what good management should look like.

Figure 4. Socio Ecological Model. Retrieved from Lee, B.C., Bendixsen, C., Liebman, A.K., & Gallagher, S.S. (2017). Using the socio-ecological model to frame agricultural safety and health interventions. *Journal of agromedicine, 22*(4), 298-303.

2.2 Green spaces

2.2.1 Framework of nature and health
It is important to be aware of the many different reasons for the use and/or contact of nature and their complex interactions, because this could have an influence on the engagement in GCP. Therefore, the frequently cited framework of Hartig et al. (2014) is used, which tries to explain the complex associations between nature and health outcomes (**Figure 5**). Some factors of the framework are important to include in this

study -as indicated with the green square in the figure, but for a better understanding a brief explanation of the whole framework is given.
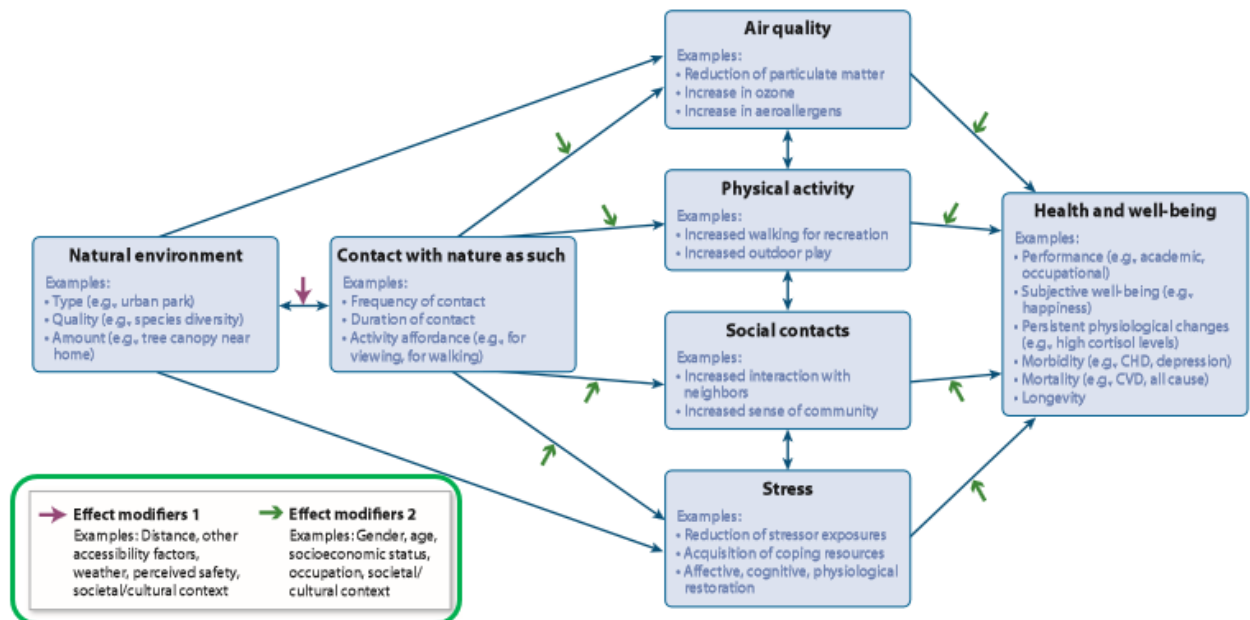

Figure 5. Association between nature and health outcomes. Adapted from Hartig, T., Mitchell, R., De Vries, S., & Frumkin, H. (2014). Nature and health. *Annual review of public health, 35,* 207-228.

As a start, green spaces can have many different functions. Some people prefer to make more *active use* of green spaces, which is about performing activities in nature such as walking or outdoor play (Lee et al., 2015; Schipperijn, Stigsdotter, Randrup & Troelsen, 2010). Other people make more *passive use* of green spaces by simply 'being' there for rest or restitution (Lee et al., 2015; Schipperijn et al., 2010). Besides that, green spaces could also have other functionalities such as a place for social interaction or cultural activities (Lee et al., 2015).

The diverse functions of green spaces could have different effects on health outcomes, depending on the way it is used. First, green areas can allow for spaces and experiences of different kinds of *physical activities* like walking or playing (Hartig et al., 2014) especially when there are sufficient green spaces nearby home (Lachowycz & Jones, 2013; Lee & Maheswaran, 2011; Thompson, Roe & Aspinall, 2013). PA can reduce obesity, diabetes and other health problems (Droomers et al., 2015). Second, nature creates places and opportunities for *social relationships* which can promote social cohesion, social capital, social support or sense of community (Astell-Burt, Feng, Mavoa, Badland & Giles-Corti, 2014; Hartig et al., 2014; Thompson et al., 2013). According to a study of Umberson and Karas Montez (2010) persons with less social contacts are more likely to die earlier than persons with more social contacts. Third, viewing or being in nature enhances *physiological and psychological responses* which may have a positive impact on mental health and stress (Lachowycz, & Jones, 2013; Thompson et al., 2013). Fourth, vegetation (e.g. trees) can *clean the air* by absorbing pollutants such as ozone, oxides, or nitrogen (Hartig et al., 2014) which is positive for health and wellbeing.

However, vegetation can have adverse health effects because some plants release pollen, which triggers allergic reactions (Hartig et al., 2014).

These four variables (PA, social contacts, stress, and air quality) which influence health outcomes are determined by six pathways (Hartig et al., 2014) as indicated in **Figure 5**. Four pathways go through 'contact with nature', whereas the two others go directly through 'characteristics of the natural environment' (Hartig et al., 2014). In addition, 'contact with nature' and 'natural environment' interact with each other, as is indicated by the two-headed arrow in **Figure 5**. Determinants of *contact with nature* are for example duration or frequency, while type of green and quality of green can be seen as characteristics of the *natural environment* (Hartig et al., 2014; Schipperijn et al., 2010). Different types of green (such as trees, plants or grasses) can all have different impacts on health outcomes (Lee et al., 2015).

To make it even more complex, all the different pathways are subject to modification by individual or contextual characteristics (Hartig et al., 2014). The interaction between 'natural environment' and 'contact with nature' is moderated by the factors distance, accessibility, attractiveness, features, weather, perceived safety, hygiene, condition and societal/cultural context (Hartig et al., 2014; Lee et al., 2015; Schipperijn et al., 2010). Moderators for the association between 'contact with nature' and 'functionality' are gender, age, SES, occupation and societal/cultural context (Hartig et al., 2014). In conclusion, the association between nature and health is complex because of the many different factors, pathways and moderators that can have an influence. Therefore, it is hard to make exact predictions of health outcomes which are due to green spaces.

2.2.2. Selection of relevant factors
The moderating factors of **Figure 5** are important to include in this study because they could influence contact, functionality and use of green spaces. Involvement in GCP also assumes forms of contact with and different kinds of use of green. Therefore, it is supposed that the moderators could also influence involvement in GCP. Some of the moderators as mentioned above have overlap and therefore they will be merged in this study. 'Hygiene' is included into 'perceived safety', 'condition' and 'features' are hosted under 'attractiveness', and 'distance' is merged with 'accessibility'. In addition, the moderator 'SES' is excluded from this study, because the target population of the study is people with a low SES. The final included moderators for this study are shown in **Table 1**.

Table 1. Moderating factors for contact with – and functionality of green spaces.

Moderators	Remarks	Studies
Accessibility	Understand as the presence of green space in a certain defined distance to where residents live, but also the ease to access green spaces (e.g. cycle paths, obstructions, traffic)	Hartig et al. (2014); Kabisch et al. (2016); Lee et al. (2015)
Attractiveness	Is about facilities and amenities in green spaces, but also natural features such as aesthetics, condition and size of the green space	Lee et al. (2015); McCormack et al. (2010); van Hecke et al. (2018)
Weather	---	Hartig et al. (2014)
Perceived safety	Perceptions about fear, security and hygiene in and around green spaces	Hartig et al. (2014); Lee et al. (2010); van Hecke et al. (2018)
Societal/cultural context	- Social factors such as social cohesion, but also having a child or dog - Cultural context is about differences in perceptions and attitudes among different cultures	Hartig et al. (2014); Lee et al. (2010); Özgüner (2011); Schipperijn et al. (2010)
Gender	---	Hartig et al. (2014)
Age	---	Hartig et al. (2014)
Occupation	---	Hartig et al. (2014)

2.3 Conceptual framework

Both the factors that determine involvement in citizen participation and the moderators for contact with- and use of green spaces are important in this study. The determinants of citizen participation constitute a theoretical basis because GCP is about citizen participation (in green spaces). The determinants and their identified facilitators and barriers could help with getting insight into aspects that goes well and points of improvement for attracting people in citizen participation. However, the type of citizen participation here has to do with 'green', meaning that factors related to green also influence the involvement in GCP. This is where the moderating factors come in. They can be used to see if the effect of determinants of citizen participation on involvement in GCP changes in other contexts or conditions (e.g. green nearby home versus green far away). This could increase the understanding of the effects of facilitators and barriers on GCP.

The conceptual framework used in this study (**Figure 6**) is thus based on the framework developed by Phang and Kankanhalli (2005) and expanded with moderating factors of green spaces as described by Hartig et al. (2014). As is clear from the figure, the moderating factors are assumed not to be important for every association of the framework. This is because almost all moderating factors stay close to the individual level, while political institution factors operate more outside of the individual to create an environment that stimulates citizen participation in green. Therefore it is not very likely that political institution factors are susceptive to the moderators. In addition, it is not said that for every association in which moderators could play a role, they do indeed. Moderators could have more or less influence, and sometimes they have no effect, meaning that the association is not influenced by a moderator. Lastly, also combinations of different moderating factors could influence associations.
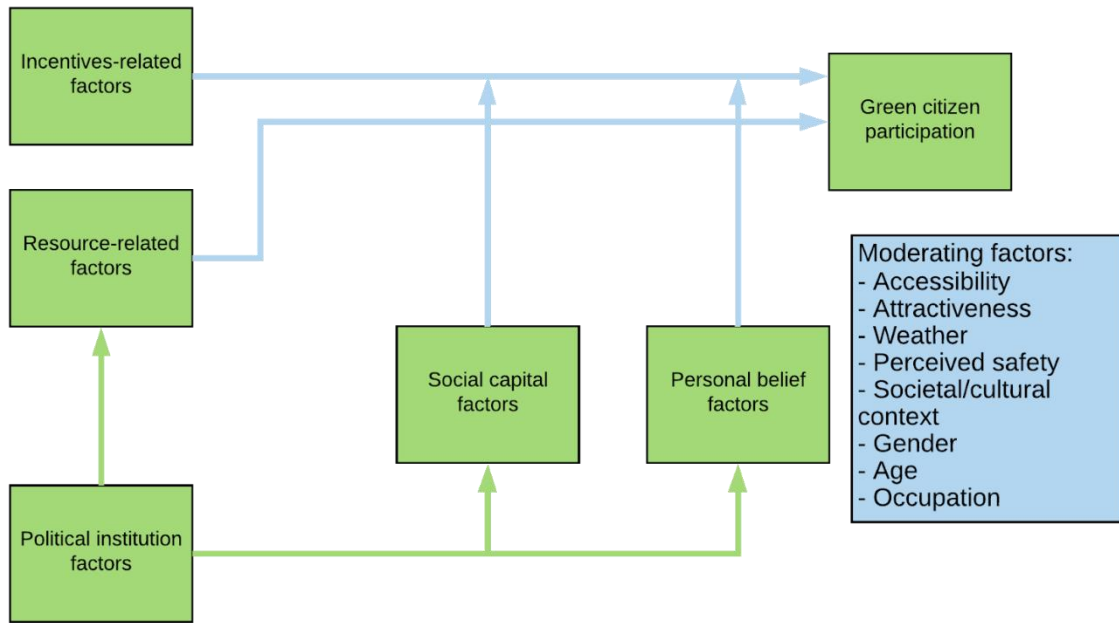
Figure 6. Conceptual framework for involvement in green citizen participation.
N.B. **blue lines** are associations that *could be* influenced by moderating factors; **green lines** are associations that *are not* influenced by moderating factors.

3. Methods

Perspectives on the engagement in GCP are studied with use of method- and data-triangulation. Four different research methods with different stakeholders were used, namely: a *narrative review, semi-structured interviews, unstructured interviews* and *observations*. The methods are explained in more detail below. Important to note is that the research is partly done together with the Dutch project 'Partigan'. This project is executed by a consortium of research organisations, the cities of Arnhem and Nijmegen and some nature and societal organisations with the aim to study -together with residents- how greening of the living environment could be increased so that residents are stimulated to make more use of green spaces and improve their health. The research is done in the Dutch cities Arnhem and Nijmegen. These cities are chosen because they are part of the ongoing project 'Partigan'. In addition, both cities already incorporate green in their health and environmental policies and they have experience with citizen participation.

3.1 Narrative review

The narrative review entails a literature review synthesizing promising approaches for involving people with a low SES in GCP. Approaches here are considered all kind of elements, forms, procedures or processes that could be used to involve people in GCP projects or to get insight into needs and preferences. Important to note is that the (most) approaches are not directly related to GCP but considered as instruments to make people enthusiastic about GCP which could eventually lead to involvement in it. During execution of the review, it was decided to conduct it in two rounds because at the start it was unsure whether enough relevant approaches could be found. However, after piloting the search strategy it turned out that there were many approaches available and therefore a second round was added to be more critical and select the most promising ones.

3.1.1 Selection of promising approaches

First round

In the first round, a general exploration of promising approaches was done. Data was collected in a non-systematic way via the (academic) databases Scopus, Web of Science and Google Scholar. In addition, grey literature, Google, websites of initiatives or organisations and suggestions of researchers from Partigan were also consulted to collect data. In all databases and websites, the following (combinations of) search terms were used: *"green citizen participation"*, *"green self-governance"*, *"green space governance"*, *"green citizen engagement"*, *"involvement"*, *"promoting"*, *"attracting"*, *"engagement"*, *"groene burgerinitiatieven"*, *"groene burgerparticipatie"*, *"betrekken"*, *"promoten"*, *"aantrekkelijk"*. Inclusion criteria for including an approach in this study were:
- Approaches with the aim to involve people in citizen participation in their neighbourhood, not necessarily targeted at people with a low SES or specifically focused on 'green' or GCP.
- Approaches that are explained in a clear and structured way so that implementation is possible.
- Approaches that could be implemented in a short time frame, due to time limitations of this study.

An exclusion criterion was approaches that have participation levels lower than consultation (e.g. informing) because these are not covered by the definition of citizen participation. Although the participation levels were often not directly mentioned, the determination was based on the descriptions of the approaches. The search strategy with the in- and exclusion criteria results in 29 promising approaches (15 from (academic) databases and 14 from grey literature, Google, initiatives or suggestions of researchers). For each approach several characteristics were studied, namely: short description, practical information, context/condition for implementation, relevance for GCP, advantages, and disadvantages. In this way, a general picture of each approach emerged which was helpful for the second round.

Second round
In the second round, the list of 29 promising approaches was shortened so that only the most promising approaches for this study remained. This shortening was done with help of the characteristics as described in the first round, triangulation of three researchers and new, more specific inclusion criteria:
- Approaches that are relevant for GCP or approaches that could be easily adapted for GCP. This choice was made with use of face validity.
- Approaches that are specifically designed for people with a low SES or approaches that are not specific for people with a low SES but could easily be used by them.
- Approaches that are flexible enough to adapt in different contexts. Face validity was used for determination.

As a result, 11 promising approaches remained (six from (academic) databases) of which the following characteristics were studied in detail: description, suitability for people with a low SES, conditions for implementation, advantages, and disadvantages **(Appendix III)**. Although some of these characteristics are similar to the ones used in the first round, the approaches in this round were studied more thoroughly and with more detail.

3.1.2 Data analysis
The data analysis of the different promising approaches was based on **Appendix III** that gives an overview of each approach. Facilitators and barriers for successful implementation of the approaches were identified with help of the Appendix.

3.2 Semi-structured interviews
Semi-structured interviews were executed at four green initiatives in Arnhem and Nijmegen (three in Arnhem, one in Nijmegen). The initiatives were selected by Partigan, who introduced the researcher of this study to them.

3.2.1 Data collection
Semi-structured interviews were hold with a total of 15 volunteers of green initiatives. The *target population* for these interviews were adult people (age 18+) with a low SES. All interviews were conducted at the location of the green initiative and they lasted between 10-30 minutes. The language spoken was Dutch. Although the interviews were recorded for transcription, additional notes were made during the interview by the researcher of this study. During one of the interviews the recording stopped because of a record problem, therefore the notes were used for analysis. The interview guide was developed in a subjective way (what are relevant questions related to the aim of this study) by the researcher of this study and a researcher of Partigan. The questions were

not necessarily related to concepts of the conceptual framework. However, after piloting the interview guide it was verified if the results could be related to the framework, which was the case. Questions were about ways of involvement in the initiative, opinions on the initiative, and meanings of the initiative for the respondent. In addition, three promising approaches from the narrative review (Photovoice, ABCD-method, Place Standard) were presented to the respondents to ask for their opinion. The selection of these three approaches from the total list was done with help of the following criteria:
- The approaches have different or contrasting perspectives
- The approaches are easy to explain and to understand
- The approaches differ in their degree of practical/theoretical level

The complete interview guide and the document that was used to explain the three approaches could be found in **Appendix I and II**.

3.2.2 Data analysis
The semi-structured interviews were conducted and transcribed in Dutch (but translated to English for the result section). For transcribing, the sound recording was listened multiple times to represent also hard to hear passages. Not relevant passages such as interjections, stutter, consenting reactions of the researcher or disruptions of the interview are removed from the transcription. However, the transcription stays close to the word choice of the respondent. The data was analysed by means of inductive coding which was done in the Word-files of the transcriptions by combining similar passages. After doing this, themes were identified for each set of matching passages, and small summaries for each theme were written. In this way, a description of different facilitators and barriers for engagement in GCP arose.

3.2.3 Ethics
During the semi-structured interviews, some ethical issues are taken into account. Most important was asking permission for recording the interview. Only with explicit permission of the respondent, the interview was recorded. In addition, some respondents asked what would be done with the results. Therefore it was important to clearly communicate on the aim of the study to avoid unrealistic expectations. Further, every respondent was told that the data is processed anonymously, and that withdrawal is possible at any moment.

3.3 Unstructured interviews
Unstructured interviews were hold with professionals of two housing corporations (one in Arnhem, one in Nijmegen), a consultancy firm for public space, and Pharos -the Dutch centre of expertise for health inequalities. Selection of these companies was done with help of the Partigan member Pharos. During a meeting with Pharos, several relevant stakeholders for inclusion in the study were discussed. After that meeting, the researcher of the study has approached about 10 stakeholders of which the above-mentioned four were willing to participate. Reasons for not participating were lack of time or no response.

3.3.1 Data collection
The unstructured interviews with Pharos and the consultancy firm were done by phone, while the professionals of the housing corporations were interviewed face-to-face. All the interviews lasted between half an hour and an hour and were not recorded. The researcher has made notes during all the interviews. It was deliberately chosen not to

conduct an interview guide format, because the aim of the conversations was to discuss knowledge and ideas in a setting in which the researcher of the study and the professional are equals. However, some questions or discussion points were prepared in advance:
- Experiences of the organisation with GCP
- Ideas about involvement of citizens with a low SES in GCP
- Facilitators and barriers for involvement in GCP
- Opinion about three promising methods (Photovoice, ABCD-method, Place Standard)

3.3.2 Data analysis

After each interview with a professional, a small report was written by the researcher of this study that gave a summary of the most important points discussed. In the end, all reports were analysed by means of inductive coding in a similar way as was done for the semi-structured interviews. In this way, facilitators and barriers for engagement in GCP were identified.

3.4 Observations

Two meetings were organised by Partigan, one with coordinators of green initiatives in Arnhem and one with policy advisors of the municipality of Nijmegen. The researcher of this study attended both meetings but has no control over topics or questions and therefore this method was considered an observational one. However, the observations were not about the behaviour of people but rather about the content of the meetings.

3.4.1 Data collection

The meeting in Arnhem took place at a community centre and the one in Nijmegen at the municipality. The researcher of this study has made notes of the most important points of the discussions. Both meetings lasted about two hours, with four key questions:
- How to involve citizens with a low SES in neighbourhood initiatives?
- What bottlenecks have the green initiatives to deal with?
- What are knowledge questions that the green initiatives have?
- What is needed to increase the impact of the green initiatives?

In addition, the three selected promising approaches (Photovoice, ABCD-method, Place Standard) were also explained by the researcher of this study during the meetings to get insight in the general opinions about them.

3.4.2 Data analysis

After each meeting, reports were written by the researcher of this study and members of Partigan. The reports were analysed in a similar way as the semi-structured interviews and unstructured interviews to identify facilitators and barriers for engagement in GCP.

4. Results

For each of the four methods, different facilitators and barriers for engagement in GCP are identified, which will be described per method.

4.1 Narrative review

4.1.1 General characteristics

A total of 11 promising approaches is identified, of which five arise from academic databases and six from grey literature, Google, initiatives or suggestions of researchers (**Table 2**). Six approaches are specifically designed for vulnerable groups or people with a low SES. In **Appendix III** an overview can be found of the most important characteristics of each approach and the consulted literature. It is recommended to study the appendix first before reading this section.

Table 2. Sources of approaches and suitability for people with a low SES.

Approach	Source	Designed for people with a low SES
Appreciative Inquiry	Academic database	No
Asset-based-community development [ABCD-method]	Academic database	Yes
Communities in Beweging [CiB]	Grey literature	Yes
Community-Action Planning [CAP]	Academic database	No
Domains' approach	Academic database	No
Four-Directional Framework	Suggestion of researcher	Yes
Kijk, een gezonde wijk	Google/initiative	Yes
Photovoice	Grey literature	Yes
Place Game	Google/initiative	No
Place Standard (leefplekmeter)	Suggestion of researcher	No
Value-based approach	Academic database	Yes

4.1.2 Facilitators for successful implementation

Different facilitating factors for successful implementation of the approaches are identified. The most important ones are: *stimulating and supporting environment, flexibility of implementation, social aspects, innovation* and *process-focused*. These are discussed in more detail below.

Stimulating and supporting environment
It is noticed that most of the more *theoretical* approaches (e.g. use of workshops and/or discussions) mentioned a stimulating and supporting environment as an important facilitator for successful implementation. This is needed to ensure continuity (Communities in Beweging [CiB]), sustainability (Four-Directional Framework) and realisation of the potential of communities (ABCD-method). Multiple approaches mentioned that residents -especially marginalized groups and people with a low SES- must feel comfortable, welcome and motivated to share ideas. Although most theoretical approaches agree on the existence of this facilitator, perspectives of what such an environment should look like differ between approaches. Some approaches (ABCD-method, CiB, Four-Directional Framework and Domains' approach) reported mainly aspects that are under responsibility of local municipalities or institutions, such as

financial support, not steering or controlling -because residents are in the lead- or regulations that promote community development. Other approaches (Appreciative Inquiry and Community Action Planning [CAP]) see the assignment of a facilitating person as an important aspect of a stimulating and supporting environment. In addition, the Domains' approach mentioned a free flow of communication and information between stakeholders.

Flexibility of implementation
Appreciative Inquiry, Domains' approach, Photovoice and Place Standard see their flexibility of implementation as an important facilitator for success. For the Domains' approach, this flexibility is about adaptations or changes within the *content* of the approach (e.g. adapted questions), depending on the community of interest. For the three other approaches, flexibility is about adaptations or changes in the *procedure* (e.g. frequency of implementation), which are related to different situations, groups of people, time spans, contexts or phases.

Social aspects
Social aspects could be identified from almost all approaches and can be roughly divided into two types of facilitators. First, having at least some social relations *before* implementation is considered an important facilitator that is mentioned multiple times. For example, CiB advised to include existing groups for implementation (e.g. friends), because they already have a strong bonding. In addition, Een Gezonde Wijk suggests implementation of their application within a group, because this increases usage of it, especially among people with a low SES. This approach also reports investment in resident 'ambassadors' because residents are more willing to participate if they know someone who is enthusiastic about it. For this, it is required to have social contacts between ambassadors and residents. This also applies to peer-to-peer learning from the Four-Directional Framework, because social contacts are required for transferring knowledge and skills. However, this approach also mentioned the importance of developing social relations *during* implementation. Other approaches agreed on this (ABCD-method, CAP, Photovoice).
The second type of facilitator that has to do with social aspects is knowing the community of interest. According to Appreciative Inquiry and Een Gezonde Wijk, understanding the existing social relationships, culture, norms, values and (technical) skills is the key for successful implementation.

Innovation
Especially the more *practical* approaches (e.g. use of applications and/or visual elements) consider innovation and creativity as important facilitators for successful implementation. For example, Een Gezonde Wijk reports inclusion of game elements as an important motivation to participate, and the use of an application as more appealing for people with a low SES compared to traditional ways. Besides that, the Domains' approach mentioned visual representations as ways to promote active participation, and Photovoice adds the power of pictures compared to words. Also, Photovoice is creative, fun and requires no reading or writing skills. However, the more theoretical Value-based approach is more critical about innovation and creativity. The approach reports that a right balance between traditional- and more innovative ways is needed for successful implementation.

Process-focused
The Place Standard and Een Gezonde Wijk both acknowledge the importance of a focus on the *process*, instead of the *results*. According to Een Gezonde Wijk, a lot of important aspects develop during implementation, such as development of skills or an increase in social contacts. The Place Standard adds the experience of residents to participate in their own living area. These aspects are more important for success than results or scores of a tool and therefore, a specific focus on the process is considered a facilitator.

4.1.3 Barriers for successful implementation
Different barriers for successful implementation of the approaches could be identified with help from **Appendix III**. Four different ones emerged, namely: *lack of time, lack of skills & resources, different stakeholders* and *key principles of approach*. These are discussed in more detail below.

Lack of time
Some of the more theoretical approaches (Appreciative Inquiry, CiB, CAP, Four-Directional Framework) reported lack of time as a barrier for successful implementation. Although a lot of approaches are flexible in the length of their time span, in general it takes a lot of time to invest in social relations or involve stakeholders. In addition, the aim of all approaches is to strengthen and develop communities, but that could not be realised in a short timeframe. Also, the ABCD-method and the Domains' approach advice follow-up to ensure quality, continuity and resolving of issues. So here, problems with time also come into play. Besides that, time-consuming problems could also arise during analysis of the results, as reported by Appreciative Inquiry.

Lack of skills & resources
Among a few practical approaches, a lack of skills is mentioned as a barrier for implementation. Een Gezonde Wijk and Place Standard report low literacy as a challenge for using applications or filling in questionnaires. Appreciative Inquiry and CAP (both theoretical approaches) also advise to make use of simple language and avoid jargon. Besides that, lack of technical skills (e.g. use of camera or mobile phone) or lack of resources (not having a phone) are mentioned as barrier by Een Gezonde Wijk and Photovoice.

Different stakeholders
CiB, CAP and the Value-based approach report difficulties with reaching consensus due to diverse or conflicting perspectives of different stakeholders. Even within the same group of stakeholders, different interests or values could arise as reported by CiB and the Value-based approach. Although this is seen as a barrier for implementation, not even all relevant stakeholders are represented in some other approaches (Appreciative Inquiry and Place Standard), especially among marginalized groups. People from these groups not always feel comfortable enough to share their stories. In addition, the ABCD-method mentioned existence of power asymmetries between residents and other institutes as a reason for not participating.

Key principles of approach
Two approaches are criticized because of their key principles, which could be a barrier for successful implementation. First the ABCD-method, which specifically focus on strengths and assets. Critics think that this focus is still important, but it ignores problems and

weaknesses that communities have to deal with, which could be also important to incorporate. Second, there are critics on conducting a need assessment among people with a low SES, as reported by CiB. It is said that people with a low SES do not always have clear needs and are not always informed about the possibilities for change in their community, which makes it hard to include their real needs and preferences because they are unknown. Although a lot of approaches made use of a need assessment, only CiB mentioned it as a barrier.

4.2 Semi-structured interviews

4.2.1 Demographic and socioeconomic characteristics

A total of 15 interviews are hold with 17 respondents (two group interviews) at four green initiatives in Arnhem and Nijmegen (three in Arnhem, one in Nijmegen). Demographic and socioeconomic characteristics of one respondent are unknown. Most respondents (n=11) are men, and the age of the respondents varied between 21-65 years, although nine are over 50 years old. The highest level of education of most respondents is Intermediate Vocational Education (in Dutch: mbo) (n=5), followed by high school/lower than Intermediate Vocational Education (n=4), University Education (n=4), and Higher Professional Education (in Dutch: hbo) (n=3). Although most respondents were employed in the past, the unemployment rate is now high (n=12). The sectors in which the respondents work/have worked are diverse (e.g. ICT, healthcare, administrative or plumber), with only one respondent having contact with green in his work (gardener). In addition, 11 of the respondents have a private garden at their house, and seven are living alone.

4.2.2 Facilitators

The facilitators identified from the semi-structured interviews are: *meaningful, incentives, learning elements, individual versus collective strategy, atmosphere, investment in social networks* and *attitude towards nature.* These are explained in more detail below.

Meaningful

A green initiative that is meaningful is for many respondents an important reason to participate. Most initiatives have relevant functions for society, such as supporting less fortunate people (e.g. producing food for the foodbank) which is according to respondents a meaningful way of spending their leisure time. Other respondents agree with this, because they think it is a 'duty' to help other people and it gives an extra motivation for participation (**Quote 1**). For some respondents, the green initiative means a lot to them because they consider it as a safe place for seeking help and talking about their problems as is illustrated with **Quote 2**. They have the feeling that the initiative could give them support. This was especially mentioned by some of the non-native Dutch respondents.

> **Quote 1**: *"I think that producing for the food bank is very important. If we did not do that, I still like the work, but this gives an extra motivation. Otherwise you will only do it for yourself, but now you do it also for someone else."*

Incentives

According to some of the respondents, people who have no interest in green could engage in green activities in their neighbourhood if they could benefit from it. It is believed that people are sensitive for (financial) rewards (e.g. subsidy, discounts, vouchers) because these could be incentives for them to engage in green activities. Besides that, about half of the respondents is positive on approaches with use of visual aspects such as Photovoice, which are considered incentives too.

Learning elements

A green initiative is considered an important place for learning new things. For some respondents this was an initial reason to participate, because they want to learn about gardening, vegetables or seek a place to experiment with green. Besides these aspects of green, the non-native Dutch respondents participate in the initiative because they wanted to learn the Dutch language. For them it is important to practice the language in a real-life setting aside of the Dutch lessons they attend. However, many respondents do not mention learning aspects as an *initial* reason to engage in the activity, but rather as a reason to *remain* in the green initiative. They mentioned the development of their gardening skills and the knowledge about vegetables as elements they like about the green initiative (**Quote 3**). In general, learning elements are mentioned by both higher and lower educated respondents.

Individual versus collective strategy

Most green initiatives try to involve new people by means of *collective promotion strategies* such as open days or advertisements on social media or in local newspapers. A lot of respondents belief this is an effective approach because the initiative is brought to the attention of the neighbourhood or even the whole city. However, some scepticism about this approach is observed among respondents who belief that only persons who have already an interest in green initiatives would visit open days or read advertisements. These respondents argue for a more *personal strategy* in which people are actively approached (e.g. mouth-to-mouth, ring the door).

Atmosphere

A good atmosphere is an important facilitator for *remaining* in the green initiative according to most of the respondents. A lot of them think the ambience is pleasant and friendly, people respect each other, and in some initiatives spontaneous activities outside of the initiative are organised which is illustrated with **Quote 4.** For some of the respondents the atmosphere was an *initial* reason to participate in the green initiative because they want to prevent loneliness and expand their social contacts (**Quote 5**). Aside of these social elements related to atmosphere, a few respondents mentioned other elements such as a lack of (time) pressure and variety in difficulty levels so that everyone can participate on his own level (**Quote 6**). This also relates to the atmosphere of the green initiative.

> *Quote 4: "...we do a lot of activities and there is plenty of room for sociability. For example, we go on excursions during the summer or we prepare meals in winter, movie nights.. that kinds of activities."*

> *Quote 5: "My background is that I live alone. First I was unemployed and now unfit for work so if you are not making something of your life… Here I can make new social contacts."*

> *Quote 6: "...everyone who participates does what he can and is not forced to do a lot of achievements. What everyone wants and can, casualness… that are words that I want to connect with the project."*

Investment in social networks

Some of the higher educated respondents mentioned that a specific coordinator is needed for the investment in social networks and the motivation of the already involved volunteers. A few respondents even belief that the survival of their green initiative depends on the investment in social networks. Two different aspects of social networks are identified. First, social networks are effective to *attract new people* because most of the respondents are engaged in the green initiative on advice or suggestion of acquaintances who are already familiar with/ involved in the initiative. Second, social networks could be used to *collaborate with other organisations* (in the neighbourhood) to increase the power of the initiative. According to the respondents, this could be organisations that are related to green initiatives, but also welfare organisations or municipalities who give support. The municipality is not only important for green initiatives, but also for green activities. The respondents from Nijmegen are positive about the policy with regard to green areas (e.g special employee for participation projects, involvement in green activities such as Operatie Steenbreek).

Attitude towards nature
All respondents have a positive attitude towards nature and for a lot of them this was an important reason to engage in the green initiative. A distinction could be made between respondents that mostly like the *gardening aspect* (outside work, big size of vegetable garden, yield of the vegetables), while others talk more broadly about the *nature* at the initiative (e.g. beautiful views, seasons, fresh air). The distinction is indicated with **Quotes 7 and 8**. The non-native Dutch respondents are in general satisfied with the amount and quality of green areas in the Netherlands compared to their native country. They think there is more than enough nature because the Netherlands is a small country.

> **Quote 7**: "I like working in the garden, with my hands in the soil, see things grow and harvest it after a few months.''

> **Quote 8**: "For me it is very important to go outside. Being outside gives a sense of satisfaction. I believe nature is important because it is beautiful, good for health, nice views, nice seasons…"

4.2.3 Barriers
The barriers identified from the semi-structured interviews are: *responsibilities of public green, lack of time* and *health status.* These are explained in more detail below.

Responsibilities of public green
A few respondents talk about green activities they could conduct in their own neighbourhood -such as maintenance of public green-, but they were quite reluctant and sceptical about it. They think it is the task of the municipality to manage this because they consider public green as the responsibility of the municipality. One respondent told that even if he wants to contribute to public green, he does not do it because he thinks the municipality has ideas about it already (**Quote 9**). This is in line with some respondents who belief that public green has a low valuation because it is public.

> **Quote 9**: "Probably you cannot even do something. I would like to plant something in my own neighbourhood, but I am not going to do that because I think there are already ideas about this made by the municipality."

Lack of time
Although some respondents have a lot of free time due to several reasons (e.g. unemployment, retirement, health problems) which is a reason for them to participate in the initiative, other respondents are busy and sometimes have to cancel appointments at the initiative. Here a difference is seen between higher and lower educated people. Respondents that are higher educated and currently employed more often cancel appointments due to work related issues. In general, respondents that spend the most

hours/days at the green initiative are lower educated respondents who are not employed at the moment.

Health status
A few respondents do have problems with their *physical health* which could hinder them in performing (physical intense) activities at the green initiative. They sometimes have to be careful but appreciate that other volunteers are informed of their health status. Contrasting to this are the few respondents with *mental health* problems, because they can improve their mental health by doing activities in the initiative. For them, the green initiative is considered a therapy or a way to deal with their problems.

4.3 Unstructured interviews

4.3.1 General characteristics
A total of five professionals who are employed in four companies (described in 3.3) were interviewed. At one of the housing corporations there was spoken with a project leader and at the other housing corporation with two managers simultaneously. Further, a consultant was interviewed at the consultancy firm aside of a project leader from Pharos.

4.3.2 Facilitators
The following facilitators are identified from the unstructured interviews with professionals that will be explained in more detail below: *initiation by professionals, collaboration* and *motivation & reward*.

Initiation by professionals
Most professionals mentioned that a lot of people -especially people with a low SES- have problems in their lives such as debts or health issues which could be reason for not engaging in green activities. They think people have other priorities and are not initiating green activities by themselves. Nevertheless, the importance of including citizens in green activities is acknowledged and therefore the professionals try to stimulate people by initiate activities themselves (e.g. operatie steenbreek, clean-up actions) hoping to attract people that would take it over after a while. Aside of that, the professionals agreed on a personal approach for making contact with these people (e.g. face-to-face conversations, ring the bell) because this is considered most effective.

Collaboration
Collaboration with other organisations is an important facilitator according to some professionals because for an individual green activity it is difficult to get things done. Besides that, for a new green activity it is most ideal to fit with related and existing activities within the municipality that already have volunteers and networks according to one of the professionals. Although these elements for engaging people in GCP are related to organisational structures, collaboration on individual level is also important. Some professionals mentioned the use of social networks for engaging new people because building mutual trust is easier among two acquaintances compared to a citizen and a professional.

Motivation & reward
According to some professionals it is important to fit with people's needs and preferences because everyone have different reasons or motivations to participate, for example distraction or self-development. Therefore, a diverse program of activities with low thresholds is perceived effective for engagement in green activities because there is something in it for everyone. Besides that, people who are engaged must be rewarded for their efforts by giving appreciation and thankfulness. This motivates people to keep going with the work. All professionals think it is necessary to have a coordinator who takes care of this motivating and rewarding part. Such a coordinator must put energy in the activity and keep motivating because the experience is that otherwise volunteers leave after a while.

4.3.3 Barriers
Only one barrier is identified from the unstructured interviews with professionals, namely: *long-lasting process.*

Long-lasting process
Starting a green activity is a long-lasting process because difficulties in contact with the municipality could delay the process. According to some professionals this could scare off people because they are enthusiastic and want to start immediately. Besides that, for some activities the neighbourhood must be involved or informed but it could take a lot of time to gain confidence from the neighbourhood residents as is experienced by most professionals.

4.4 Observations

4.4.1 General characteristics
As described in 3.4, two meetings were attended. A total of nine coordinators and seven researchers of Partigan were present at the meeting with coordinators of green initiatives. During the meeting at the municipality of Nijmegen, seven policy advisors of the municipality and three researchers of Partigan were present.

4.4.2 Facilitators
Two facilitators for engagement in GCP are identified, namely: *attractive facilities* and *no initial participation.*

Attractive facilities
It is observed that investment in attractive facilities could stimulate people to participate in the green initiative. Social aspects such as coffee and chatting are important elements of a green initiative that should enabled by having a 'canteen' or another place for a comfortable break. The location of the initiative is also important because it is mentioned that an appealing entrance at a location nearby (e.g. within the neighbourhood) invites people to participate. Besides that, the green initiative should not only focus on green aspects according to a coordinator, but also on the support of volunteers with a low SES who often have multiple problems. Having facilities that could support these people (e.g. distribution of free food) causes remaining in the initiative.

No initial participation
During the meeting with the municipality, it was observed that the municipality is not always enthusiastic about GCP. For example, they consider the concept of citizen participation as citizens who take part in conversations, but not in actions. Also, they see citizens as the experts of their street, but not as developers because citizens often have no ideas about things they want, or do not want changes at all. However, the assumption of the municipality is that an action of the municipality could lead to a reaction of citizens, because they want their voices to be heard. Therefore, a lot of decisions and implementations are made without involvement of citizens because the experience is that citizens could engage in green activities as a reaction on decisions of the municipality. In that way, 'no initial participation' could be considered as an involvement strategy for green activities and is therefore identified as facilitator.

4.4.3 Barriers
Two barriers for engagement in GCP are identified, namely: *contact with municipality* and *resistance of people*.

Contact with municipality
During the meeting with the coordinators of green initiatives, difficulties in the contact with the municipality are often mentioned. The communication is perceived bad, it takes a lot of time to get things done and it is unclear who the person of contact from the municipality is.

Resistance of people
During both meetings, it was mentioned that there are always people who have no interest in green (activities) at all. It is believed that some people (with a low SES) have negative associations with green (e.g. dog faeces) and therefore they prefer bricks over green areas. Although the experience of the municipality is that these people could change their negative attitude towards a more positive one after implementation of a green area, this is not the group of people who is willing to engage in green initiatives or green activities. Attendees of both meetings accept this and instead want to focus on groups of people who are willing to participate.

5. Discussion

5.1 Main findings

The aim of this study was to get insight into perspectives of different relevant stakeholders on the engagement of people with a low SES in GCP by identifying facilitators and barriers. **Tables 3 and 4** give an overview of the identified facilitators and barriers and relate them to one or more factor(s) of the conceptual framework. Most facilitators are related to political institution factors (n=6), social capital factors (n=5) and incentive-related factors (n=4). The first two factors are created in an environment outside the individual, on macro or meso level. Incentive-related factors are on micro level but are influenced by the environment. Therefore it is assumed that the *creation of a stimulating environment* is an important finding that captures the important facilitators for engagement in GCP. This is interesting because a result of the narrative review was that it is unknown what a stimulating environment should look like. It seems that the findings of this study could contribute to an answer on this issue. Most barriers are related to resource-related factors (n=4) and political institution factors (n=3). These differ from each other because the resource-related barriers are on micro/meso level while the political institution factors are on meso/macro level. Therefore it is assumed that a *lack of resources* and *policies & politics* are both important findings that could hinder engagement in GCP. In **Figure 7**, a visual representation of the most important findings is presented.

Table 3. Overview of identified facilitators.

	Facilitator	Factor(s) of conceptual framework
Narrative review	Stimulating and supporting environment	Political institution
	Flexibility of implementation	?
	Social aspects	Social capital
	Innovation	?
	Process-focused	Resource-related + Social capital
Semi-structured interviews	Meaningful	Incentive-related
	Incentives	Incentive-related
	Learning elements	Resource-related + Incentive-related
	Individual versus collective strategy	?
	Atmosphere	Social capital + Political institution
	Investment in social networks	Social capital + Political institution
	Attitude towards nature	Moderator
Unstructured interviews	Initiation by professionals	Resource related + Political institution
	Collaboration	Social capital
	Motivation & reward	Incentive-related
Observations	Attractive facilities	Political institution
	No initial participation	Political institution + Personal belief

Table 4. Overview of identified barriers.

	Barrier	Factor(s) of conceptual framework
Narrative review	Lack of time	Resource-related
	Lack of skills & resources	Resource-related
	Different stakeholders	Political institution
	Key principles of approach	?
Semi-structured interviews	Responsibilities of public green	Political institution + Personal belief
	Lack of time	Resource-related
	Health status	?
Unstructured interviews	Long-lasting process	Resource related + Incentive-related
Observations	Contact with municipality	Political institution
	Resistance of people	Moderator

Personal belief factors are not identified as an important facilitator or barrier according to **Tables 3 and 4**. An explanation for this is that all the results -with exception of the narrative review- are about perceptions on GCP, meaning that it is not relevant for this study to incorporate a concept that specifically relates to this. For example, results of incentive-related factors or resource-related factors are about perceptions -or personal beliefs- people have about this. Besides that, moderating factors also stay behind. This could be explained with the fact that most of the moderators are about aspects of green, while only a few facilitators and barriers are related to green, such as attitude towards nature. Therefore, it could be reasoned that the results are more related to citizen participation in general. Also, some facilitators/barriers could not be related to a factor of the conceptual framework. Most of these are about characteristics of approaches or strategies to involve people in GCP, which is relevant for this study but outside the scope of the conceptual framework.

When studying the facilitators and barriers in more detail, different types of GCP could deduced, namely *green initiatives* and *green activities* (**Figure 7**). Green initiatives are more participative than green activities because Van Houwelingen et al. (2014) report that in citizen initiatives citizens initiate activities or projects, while in citizen activities the government has the lead. This relates to Arnstein's Ladder of Citizen Participation as described in **Figure 2** because green initiatives have a higher position on the ladder compared to green activities. Facilitators/barriers differ between green initiatives and green activities which implicates that the levels of participation (Arnstein, 1969) as included in this study cannot be considered as one entity. For example, from the results it is assumed that a green initiative must have something to offer that appeals to people for effective engagement, while a green activity must invest in attractive and innovative involvement strategies. The different levels of participation are incorporated in the discussion of the three main findings (creation of a stimulating environment, lack of resources, and policies & politics).
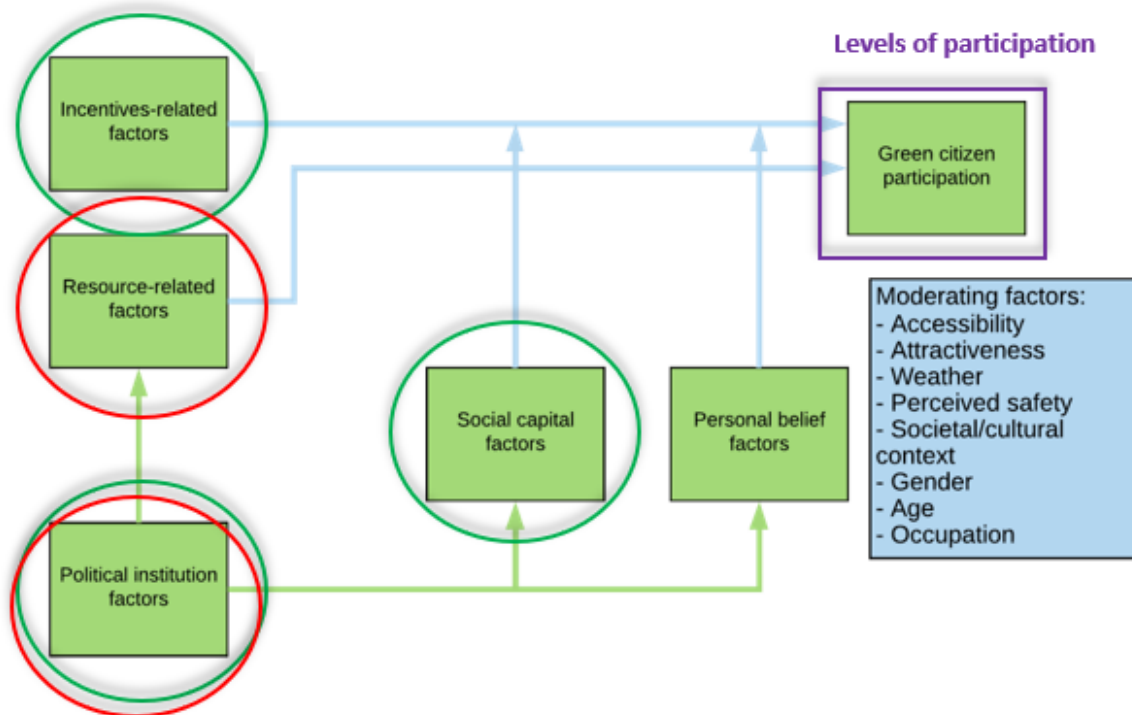
Figure 7. Findings related to conceptual framework.
N.B. **Green circles** are the most important facilitators, **red circles** are the most important barriers. **Purple lines** indicate the difference between *green initiatives* and *green activities*.

5.1.1 Creation of a stimulating environment

It seems that volunteers of *green initiatives* are sensitive for elements such as meaningfulness, learning and a pleasant atmosphere. Learning about vegetables, doing charity work or meeting new people are assumed as elements that could enrich people's lives. This relates to the aspects 'altruism' and 'self-fulfilment' from theory. Results of two studies show that engagement in meaningful activities have a positive influence on well-being (Eakman, 2014), especially among people with mental illnesses (Goldberg, Brintnell & Goldberg, 2002). This relates to results of 'health status' because engagement in a green initiative is perceived as a therapy for mental health problems according to some respondents. It is therefore likely that people who are planning to engage in a green initiative make a conscious choice for the initiative that seems most valuable for them. This is in line with the results of Van Dam, Salverda and During (2010) who states that citizen initiatives in general are based on strong personal ideals and choices. In that way, an environment is stimulating for engagement in green initiatives if it fits with the needs and preferences of people and is clear about the aim and structure of the initiative. In contrast, volunteers of *green activities* must be seduced to involve in green activities by means of attractive elements such as (financial) rewards, game elements or use of visual approaches that are considered as incentives. According to Thiel and Lehner (2015) the use of applications and smartphones is considered a promising tool for citizen participation. This is confirmed by the facilitator 'innovation' from the narrative review because it underlines the importance of creative and innovative ways to engage especially people with a low SES. Because of these results, it is reasoned that for engagement of people in green activities an active approach is needed, while a passive approach is sufficient for green initiatives.

Social aspects are mentioned in all four methods and are relevant for both green initiatives and green activities. Therefore it is reasoned that this is an important element of a stimulating environment. Collaboration with other organisations and the involvement of new people by using social networks are necessary for both green initiatives and -activities, which is in line with the theory that emphasizes the importance of social networks. A study from Van Dam et al. (2010) reports that collaborations are important strategies of green initiatives, unless administrative issues related to collaboration overshadow the activities of the initiative. However, this note of warning was not identified from the results. From the results it seems that the use of social networks is sufficient for green initiatives, because no other social aspects are mentioned -aside of sociability as explained above. This is in line with a study of Vrielink and Verhoeven (2011) who report that an important characteristic of a citizen initiative is that local governments interfere as little as possible to give citizens freedom. Here, an interesting difference is identified because *green initiatives* are very autonomous, while *green activities* depend on support of municipalities or welfare organisations according to the results. Professionals mentioned that they stimulate people to participate in green activities by initiate activities themselves or support with finding a suitable activity. A study from Dijkshoorn-Dekker, Soma and Blaeij (2017) report the initiation of activities as important meeting places for potential initiators of green activities. Because of this, it is assumed that professionals could act like a 'broker' between citizens and green activities. Although this implicates that professionals make active efforts to engage people in green activities, a result of one of the meetings was that municipalities often make no use of citizen participation because of the assumption that citizens themselves could engage in green activities as a reaction on decisions of the municipality. This contrasting result is a clear example of the different perspectives of stakeholders.

5.1.2 Lack of resources

A lack of time was one of the most frequently mentioned barriers for engagement in GCP. According to theory, a lack of time is mainly about the busy lives of people as reason for not participating. From the results of the semi-structured interviews it was observed that higher educated people who are employed most often experience time issues, but this is not mentioned as a reason for not participating or quitting in the green initiative. However, the results could be biased because there is only spoken with already engaged people. Besides a busy life, other interesting results related to time issues appeared. Starting a green initiative or green activity is a difficult and long-lasting process because it takes time to engage sufficient people, municipalities have lengthy waiting times, gaining confidence of residents is difficult and implementation could not be realised in a short timeframe. A study from Van Dam et al. (2010) acknowledged this by stating that green initiatives need endurance and persistence to survive. No clear distinction between green initiatives and green activities is observed, which could be explained because time issues are important everywhere. However, it is assumed that these have a larger impact on green initiatives because this type of GCP is autonomous without much support from outside as described by Vrielink and Verhoeven (2011). A lack of skills (such as low literacy or lack of technical skills) is perceived as barrier for engagement in GCP according to the narrative review, but it is not identified from results of the other methods. Two possible explanations for this are reasoned. First, it could be that the respondents do not want to talk about a possible lack of skills, because of feelings of shame or uncertainty. This is in line with results of a study about low literacy (Oosterberg, Bakx, Van Bommel & Elbrink, 2012). Second, it is possible that the results

are biased because there was only spoken with already engaged people who could perceive their skills as sufficient for participating.

5.1.3 Policies & politics

According to results of the review, it is difficult to reach consensus about policies and implementations, because there are always different stakeholders with other perspectives. This is clearly illustrated with the barrier 'responsibilities of public green', that is specifically related to *green activities*. Respondents think the municipality is responsible for the maintenance of public green areas, while the municipality think that some groups of people are not interested in public green, as mentioned in the barrier 'resistance of people'. Interestingly, results of a study done by Yetano, Royo and Acerete (2010) confirmed the latter by stating that local governments consider a lack of citizen interest as most important barrier for citizen participation. It could be argued that there is uncertainty from both sides because citizens are not well-informed about the possibilities of engagement in public green spaces, while the municipality does not always have insight into reasons of citizens for not participating. However, some caution is needed because there is a growing tendency towards adoption or maintenance of green spaces by citizens in the Netherlands (Dijkshoorn-Dekker, Kortstee, Michels & Polman, 2018). This implicates that the shift in responsibility from local government to citizens is clear for some people, but not for all. *Green initiatives* have other issues related to policies and politics. Despite their independence as described by Vrielink and Verhoeven (2011), green initiatives need the municipality for some issues (e.g. licenses, subsidies), which is perceived as difficult due to communication problems and lengthy waiting times. According to Van Dam et al. (2010) these difficulties in contact with the municipality could be explained by the different cultures and ways of working between municipalities and green initiatives. Municipalities have to do with aspects such as accountability, legitimacy and enforcement, while initiatives are informal, personal and impassioned about their aims (Van Dam et al., 2010). These differences could result in conflicts.

5.2 Reflection on conceptual framework

In general, the framework of citizen participation as described by Phang and Kankanhalli (2005) is considered useful for this study because it contains a lot of different factors related to citizen participation. In addition, these factors are on different levels (micro, meso, macro) which made the framework even more interesting. However, some limitations were observed. First, the framework is vague in its explanation because no clear definitions of the concepts are given, which made allocation of the results questionable. Contrasting to that, a lot of detailed aspects per concept were mentioned, which made it hard to keep oversight of the framework. Nevertheless, most results could be placed under one or more of the concepts.

Second, there is doubt about some of the associations in the original framework. Theory mentioned the influence of political institution factors on resources, social capital and personal belief factors but from the results it is assumed that political institution factors also influence incentive-related factors because of the importance of a stimulating environment. Creation of such an environment usually takes place on macro or meso level and could therefore influence incentives that are on micro level. Besides that, personal belief factor is not identified as an important factor for this study as described above, but in other studies and contexts it could be relevant. Therefore, the factor remained in the new conceptual framework although it is thought that it could be

influenced by resource-related factors. The results indicate that people have perceptions about their time or skills (e.g. the free time I have is sufficient for participating in GCP) that could influence whether or not to engage in GCP. This relates to the concept of 'perceived self-efficacy' -people's beliefs about their capabilities- that could influence motivation (Bandura, Freeman & Lightsey, 1999). The association between social capital and incentives as described in theory is confirmed by the results because aspects related to social capital (e.g. meeting new people) could influence motivations or incentives to engage in GCP.

Third, the framework is unclear about the type of participation it wants to address, while the results emphasized the importance of a distinction between levels of participation. Fourth, the contribution of the moderators in this study was less than expected, because most identified moderators were about perceptions of nature, a factor that is not included in the original framework of Hartig et al. (2014). An explanation for this is that the original framework is about objective associations between nature and health, while perceptions are subjective. Therefore, it is unclear whether the framework of Hartig et al. (2014) is suitable for 'green aspects' of GCP, although it could be that more moderators are identified in other (larger) studies. It is assumed that perceptions about nature are important for engagement in GCP and therefore this moderator is included in the newly developed conceptual framework, aside of the other adaptations (**Figure 8**).
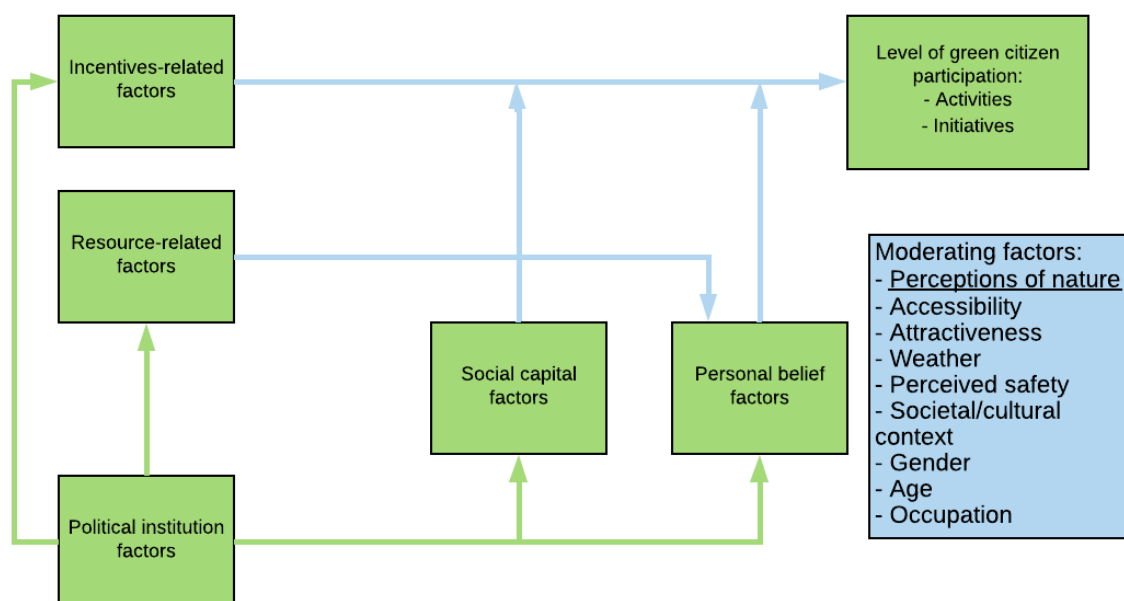

Figure 8. Adapted conceptual framework.

5.3 Reflection on methodology

This study made use of four methods (narrative review, semi-structured interviews, unstructured interviews and observations) and include different stakeholders. This use of method- and data triangulation is considered a strength because it increases the reliability and validity of the results. Also, as far as known no other studies on GCP are done in this way, which further justifies the triangulation of different methods and data. However, some limitations of this study are observed, related to sampling plan and data collection.

It was chosen to conduct the interviews with professionals in an open and unstructured way, without using an interview guide. This was done to create an environment in which researcher and professionals are equals and could share ideas, although the consequence is that the internal validity of this instrument is low. In an attempt to increase this, some discussion points were prepared. Nevertheless, due to the explorative nature of this study using open unstructured interviews were deemed appropriate. Besides that, the interview guide used for the semi-structured interviews was not directly based on the factors of the conceptual framework which means that some factors of the framework could be under- or overrepresented in the interview guide. However, it was not aimed to deductively 'test' the conceptual framework, but rather used an inductive approach which enables identification of other concepts not related to/underlying the framework. Also, some of the respondents are non-native Dutch people who have difficulties in speaking Dutch and English. Because of this it could be that the researcher interpreted their answers in a wrong way which could decrease the internal validity. Lastly, there is always the risk of socially desirable answers, which could also be a threat for the internal validity.

As expected, the *study population* for the semi-structured interviews differed from the *target population* because it was not allowed to select on income or educational level due to ethical reasons. Therefore, higher educated people also took part in the interviews. It was tried to avoid this as much as possible by choosing green initiatives that on average contain a high percentage of people with a low SES. Besides that, talking about people with a low SES was a sensitive topic for most professionals because they do not consider them as one specific group. The consequence of both issues is that the results are not generalizable to people with a low SES in general. Also, the focus of the study was on the cities Arnhem and Nijmegen, meaning it could not be said that the results are representative for the Netherlands as a whole. Nevertheless, the results are still useful and valuable.

5.4 Recommendations for further research and practice

The results of this study raise some new questions and therefore further research is needed on some aspects. First, it turned out that there are differences between green initiatives and green activities. It is interesting to study these and other types of GCP in more detail to get a better understanding of their differences, similarities and ways of involvement. Exploring this gives additional insights in the perspectives on engagement of people with a low SES in GCP. Second, a lot of facilitators and barriers are identified from results of different stakeholders, but perspectives of residents who are not engaged/not willing to engage in green initiatives or -activities are lacking. It would be interesting to interview them in a new study to get more insights into barriers and reasons for not participating. Third, the explorative nature of this study allowed not for studying interactions between different facilitators, barriers and moderators for involvement in GCP, although there are some indications for this. Further research that study these interactions in more detail could lead to a better understanding of the mechanisms behind involvement in GCP. Fourth, the results of this study seem more related to citizen participation in general, instead of green citizen participation. However, this cannot be proved within this study and therefore further research could be done that compares facilitators/barriers of different topics of citizen participation. This could give more insights into the contribution of the 'green' aspect for green citizen participation. As far as known, this is one of the first studies on reasons for involvement in GCP that incorporates different stakeholders. GCP is considered as a strategy to improve health outcomes, specifically for people with a low SES. Although it is hard to generalise the

results to these group, the study is of primary interest for the area of health promotion because there could be some promising points for engagement in GCP. This study is also relevant for social sciences in general because it provides new insights of perspectives on involvement in citizen participation. Citizen participation is an important topic nowadays and therefore policy makers could implement relevant insights of this study in policies that promote engagement in citizen participation. Besides that, green initiatives, green activities and other organisations related to GCP could use the results to fit more with the needs and preferences of their volunteers.

Conclusion

The main question of this research was: *What facilitators and barriers influence engagement of adult people with a low SES in green citizen participation?* The most important insight is that there is not a clear answer to this question, because it depends on the type of green citizen participation. Green initiatives and green activities are identified as two types with different facilitators and barriers. For green initiatives, it is important to operate in an independent way and create an environment that fits with people's needs and preferences. Green activities need an environment with support from politics and welfare organisations and innovative and attractive elements to engage people. Uncertainty about the responsibility for public green is a barrier for green activities, while green initiatives perceive communication problems with politics as a main barrier. For both types, a lack of time or skills could be a reason for not engaging in green citizen participation. Although further research is needed to study the complex phenomenon of green citizen participation in more detail and in different contexts, this study is considered an important first step in the promotion of green citizen participation among people with a low SES.

References

Aalbers, C. B. E. M., Kamphorst, D. A., & Langers, F. (2018). *Bedrijfs-en burgerinitiatieven in stedelijke natuur: hun succesfactoren en knelpunten en hoe de lokale overheid ze kan helpen slagen* (No. 118). Wettelijke Onderzoekstaken Natuur & Milieu.

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of planners*, *35*(4), 216-224.

Astell-Burt, T., Feng, X., & Kolt, G. S. (2013). Does access to neighbourhood green space promote a healthy duration of sleep? Novel findings from a cross-sectional study of 259 319 Australians. *BMJ open*, *3*(8), 1-6.

Astell-Burt, T., Feng, X., Mavoa, S., Badland, H. M., & Giles-Corti, B. (2014). Do low-income neighbourhoods have the least green space? A cross-sectional study of Australia's most populous cities. *BMC Public Health*, *14*(1), 292.

Bandura, A., Freeman, W. H., & Lightsey, R. (1999). Self-efficacy: the exercise of control. *Journal of Cognitive Psychotherapy, 13* (2), 158-164.

Bolleyer, N., & Weiler, F. (2018). Why Groups Are Politically Active: an Incentive-Theoretical Approach. *Comparative Political Studies*, *51*(12), 1628-1660.

Christensen, P., & James, A. (Eds.). (2008). *Research with children: perspectives and practices*. Abingdon: Routledge.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American journal of sociology*, *94*, 95-120.

Community Tool Box (2018). Implementing photovoice in your community. Retrieved on 4-12-18 from https://ctb.ku.edu/en/table-of-contents/assessment/assessing-community-needs-and-resources/photovoice/main

Dahlgren, G., & Whitehead, M. (1991). *Policies and strategies to promote social equity in health*. Stockholm: Institute for future studies.

Davelaar, M., Duyvendak, J. W., Fooien, J. M. W., Raspe, A., Sprinkhuizen, A. M. M., & Tonkens, E. (2002). *Wijken voor bewoners: Asset-Based Community Development in Nederland*. Den Haag: Kenniscentrum Grote Steden.

De Vries, S., Verheij, R. A., Groenewegen, P. P., & Spreeuwenberg, P. (2003). Natural environments—healthy environments? An exploratory analysis of the relationship between greenspace and health. *Environment and planning A*, *35*(10), 1717-1731.

De Zeeuw, A., & Den Broeder, L. (2018). Kijk! een gezonde wijk: eindrapportage voor HvA Urban Management. Amsterdam: Hogeschool van Amsterdam, Urban Management.

Dijkshoorn-Dekker, M., Kortstee, H., Michels, R., & Polman, N. (2018). *Groen in de stad: het perspectief van de vastgoedsector*. Wageningen Economic Research.

Dijkshoorn-Dekker, M. W. C., Soma, K., & Blaeij, A. T. (2017). *Groene initiatieven in de stad* (No. 2017-012). Wageningen Economic Research.

Dreijerink, L., Kruize, H., & Van Kamp, I. (2009). *Burgerparticipatie in beleidsvorming. Resultaten van een verkennende literatuurreview*. RIVM briefrapport.

Droomers, M., Jongeneel-Grimen, B., Kramer, D., De Vries, S., Kremers, S., Bruggink, J. W., ... & Stronks, K. (2016). The impact of intervening in green space in Dutch deprived neighbourhoods on physical activity and general health: results from the quasi-experimental URBAN40 study. *J Epidemiol Community Health*, *70*(2), 147-154.

Dubos, R. (2017). *Social capital: theory and research*. New York: Routledge.

Eakman, A. M. (2014). A prospective longitudinal study testing relationships between meaningful activities, basic psychological needs fulfillment, and meaning in life. *OTJR: occupation, participation and health*, *34*(2), 93-105.

Eldredge, L. K. B., Markham, C. M., Ruiter, R. A., Kok, G., & Parcel, G. S. (2016). *Planning health promotion programs: an intervention mapping approach* (4th ed.). San Francisco: John Wiley & Sons.

Foster-Fishman, P. G., Pierce, S. J., & Van Egeren, L. A. (2009). Who participates and why: building a process model of citizen participation. *Health Education & Behavior*, *36*(3), 550-569.

Frumkin, H. (2001). Beyond toxicity: human health and the natural environment. *American journal of preventive medicine*, *20*(3), 234-240.

Gascon, M., Triguero-Mas, M., Martínez, D., Dadvand, P., Rojas-Rueda, D., Plasència, A., & Nieuwenhuijsen, M. J. (2016). Residential green spaces and mortality: a systematic review. *Environment international*, *86*, 60-67.

Gezond in. (n.d.). Instrumenten: De Leefplekmeter. Retrieved on 15-10-18 from https://www.gezondin.nu/instrumenten

Giles-Corti, B., & Donovan, R. J. (2002). The relative influence of individual, social and physical environment determinants of physical activity. *Social science & medicine*, *54*(12), 1793-1812.

Goldberg, B., Brintnell, E. S., & Goldberg, J. (2002). The relationship between engagement in meaningful activities and quality of life in persons disabled by mental illness. *Occupational Therapy in Mental Health*, *18*(2), 17-44.

Green, D., & Shapiro, I. (1996). *Pathologies of rational choice theory: a critique of applications in political science*. Yale University Press.

Gubbels, J. S., Kremers, S. P., Droomers, M., Hoefnagels, C., Stronks, K., Hosman, C., & De Vries, S. (2016). The impact of greenery on physical activity and mental health of adolescent and adult residents of deprived neighborhoods: a longitudinal study. *Health & place*, *40*, 153-160.

Haaland, C., & Van den Bosch, C. K. (2015). Challenges and strategies for urban green-space planning in cities undergoing densification: a review. *Urban Forestry & Urban Greening*, *14*(4), 760-771.

Hartig, T., Mitchell, R., De Vries, S., & Frumkin, H. (2014). Nature and health. *Annual review of public health*, *35*, 207-228.

Hoffimann, E., Barros, H., & Ribeiro, A. I. (2017). Socioeconomic inequalities in green space quality and accessibility - Evidence from a Southern European city. *International journal of environmental research and public health*, *14*(8), 916.

Horghagen, S., Magnus, E., Anthun, K. S., Knudtsen, M. S., Wist, G., & Lillefjell, M. (2018). Involving citizens' occupation-based knowledge in public health planning: Why and how. *Journal of Occupational Science*, *25*(1), 112-123.

Irvin, R. A., & Stansbury, J. (2004). Citizen participation in decision making: is it worth the effort? *Public administration review*, *64*(1), 55-65.

Kabisch, N., Strohbach, M., Haase, D., & Kronenberg, J. (2016). Urban green space availability in European cities. *Ecological indicators*, *70*, 586-596.

Kalkbrenner, B. J., & Roosen, J. (2016). Citizens' willingness to participate in local renewable energy projects: the role of community and trust in Germany. *Energy Research & Social Science*, *13*, 60-70.

Kenniscentrum Sport. (2012). Communities in Beweging: onderzoek naar aanbevelingen om de training Communities in Beweging te verbeteren. Retrieved on 12-12-18 from https://www.kenniscentrumsport.nl/publicatie/?communities-in-beweging&kb_id=10499

Kijk! Een gezonde wijk. (2017). Resultaten van Kijk! Een gezonde wijk. Retrieved on 10-12-18 from http://www.kijkeengezondewijk.nl/#/

Lachowycz, K., & Jones, A. P. (2013). Towards a better understanding of the relationship between greenspace and health: development of a theoretical framework. *Landscape and Urban Planning*, *118*, 62-69.

Laverack, G. (2003). Building capable communities: experiences in a rural Fijian context. *Health promotion international*, *18*(2), 99-106.

Laverack, G. (2005). Using a 'domains' approach to build community empowerment. *Community Development Journal*, *41*(1), 4-12.

Laverack, G., & Thangphet, S. (2007). Building community capacity for locally managed ecotourism in Northern Thailand. *Community Development Journal*, *44*(2), 172-185.

Lee, A. C. K., Jordan, H. C., & Horsley, J. (2015). Value of urban green spaces in promoting healthy living and wellbeing: prospects for planning. *Risk management and healthcare policy*, *8*, 131-137.

Lee, A. C., & Maheswaran, R. (2011). The health benefits of urban green spaces: a review of the evidence. *Journal of public health*, *33*(2), 212-222.

Lee, Y., & Schachter, H. L. (2018). Exploring the Relationship between Trust in Government and Citizen Participation. *International Journal of Public Administration*, *1,* 1-12.

Loket Gezond Leven. (2018). Communities in Beweging. Retrieved on 30-10-18 from https://www.loketgezondleven.nl/leefstijlinterventies/interventies-zoeken/1402398

Maas, J., Verheij, R. A., Groenewegen, P. P., De Vries, S., & Spreeuwenberg, P. (2006). Green space, urbanity, and health: how strong is the relation? *Journal of Epidemiology & Community Health*, *60*(7), 587-592.

Maller, C., Townsend, M., Pryor, A., Brown, P., & St Leger, L. (2006). Healthy nature healthy people: 'contact with nature' as an upstream health promotion intervention for populations. *Health promotion international*, *21*(1), 45-54.

Marijnissen, H. (2018, 7th of September). Vergroening klieft de aarde in twee werelden. *Trouw*. Retrieved on 12-9-18 from https://journa.com/hans-marijnissen

Mathie, A., & Cunningham, G. (2003). From clients to citizens: asset-based community development as a strategy for community-driven development. *Development in practice*, *13*(5), 474-486.

Mattijssen, T. J. M., Buijs, A. E., Elands, B. H. M., & Van Dam, R. I. (2015). *De betekenis van groene burgerinitiatieven* (No. 127). Wettelijke Onderzoekstaken Natuur & Milieu.

Michels, A., & De Graaf, L. (2010). Examining citizen participation: local participatory policy making and democracy. *Local Government Studies*, *36*(4), 477-491.

Mitchell, R., & Popham, F. (2008). Effect of exposure to natural environment on health inequalities: an observational population study. *The Lancet*, *372*(9650), 1655-1660.

Morris, G. P. (2010). Ecological public health and climate change policy. *Perspectives in Public Health*, *130*(1), 34-40.

Movisie (2010). Asset-based community development. Retrieved on 22-11-18 from https://www.movisie.nl/interventie/abcd

National Health Service Scotland. (2018). Place Standard process evaluation: learning from case studies in year one. Retrieved on 10-12-18 from http://www.healthscotland.scot/publications/place-standard-process-evaluation-year-one

Nederlands Instituut voor Sport en Bewegen. (2007). Doe mee, beweeg mee: de eindbalans na vier jaar Communities in Beweging. Retrieved on 30-10-18 from https://www.kenniscentrumsport.nl/publicatie/?communities-in-beweging&kb_id=3724

Nyaupane, G. P., & Poudel, S. (2012). Application of appreciative inquiry in tourism research in rural communities. *Tourism Management*, *33*(4), 978-987.

O'Brien, K. L., & Wolf, J. (2010). A values-based approach to vulnerability and adaptation to climate change. *Wiley Interdisciplinary Reviews: Climate Change*, *1*(2), 232-242.

Oosterberg, E., Bakx, J., Van Bommel, H., & Elbrink, S. (2012). Visueel voorlichtingsmateriaal voor laaggeletterden. *Tijdschrift voor praktijkondersteuning*, *7*(6), 150-154.

Parry, G., Moyser, G., & Day, N. (1992). *Political participation and democracy in Britain*. Cambridge University Press.

Phang, C. W., & Kankanhalli, A. (2005). A research framework for citizen participation via e-consultation. *AMCIS 2005 Proceedings*, 2003-2010.

Placemaking Plus. (2017). Place Game Report document. Retrieved on 11-12-18 from https://www.placemakingplus.com/nunspeet-nl

Place Standard. (n.d.). Place Standard: How Good Is Our Place? Retrieved on 1-10-18 from https://www.placestandard.scot/

Platform31. (2018). Inspiratie- en werkboek gezondheid en ruimte. Retrieved on 31-10-18 from https://www.gezondin.nu/?file=937&m=1526745445&action=file.download

Prashar, S., Shaw, R., & Takeuchi, Y. (2013). Community action planning in East Delhi: a participatory approach to build urban disaster resilience. *Mitigation and adaptation strategies for global change*, *18*(4), 429-448.

Project for Public Spaces. (2016). The Place Game: How We Make The Community The Expert. Retrieved on 26-10-18 from https://www.pps.org/article/place-game-community

Pun, V. C., Manjourides, J., & Suh, H. H. (2018). Association of neighborhood greenness with self-perceived stress, depression and anxiety symptoms in older US adults. *Environmental Health*, *17*(1), 39.

Porumbescu, G. (2017). Linking transparency to trust in government and voice. *The American Review of Public Administration*, *47*(5), 520-537.

Putnam, R. D. (1993). *Making democracy work*. New Jersey: Princeton University Press, Princeton.

Reid, M. G., Hamilton, C., Reid, S. K., Trousdale, W., Hill, C., Turner, N., ... & Matthews, H. D. (2014). Indigenous climate change adaptation planning using a values-focused approach: a case study with the Gitga'at nation. *Journal of Ethnobiology*, *34*(3), 401-424.

Resnik, D. B., Elliott, K. C., & Miller, A. K. (2015). A framework for addressing ethical issues in citizen science. *Environmental Science & Policy*, *54*, 475-481.

Richardson, V. (1996). The role of attitudes and beliefs in learning to teach. *Handbook of research on teacher education*, *2*, 102-119.

Rijksinstituut voor Volksgezondheid en Milieu. (2011). Wat verstaan we onder een gezonde leefomgeving? Retrieved on 13-9-18 from https://www.rivm.nl/Onderwerpen/G/Gezonde_leefomgeving/Wat_verstaan_we_onder_een_gezonde_leefomgeving#report

Roberts, N. (2004). Public deliberation in an age of direct citizen participation. *The American review of public administration*, *34*(4), 315-353.

Sallis, J. F., Owen, N., & Fisher, E. (2015). Ecological models of health behavior. *Health behavior: Theory, research, and practice*, *5*, 43-64.

Schipperijn, J., Stigsdotter, U. K., Randrup, T. B., & Troelsen, J. (2010). Influences on the use of urban green space - a case study in Odense, Denmark. *Urban forestry & urban greening*, *9*(1), 25-32.

Seymoar, N. K., Ballantyne, E., & Pearson, C. J. (2010). Empowering residents and improving governance in low income communities through urban greening. *International Journal of Agricultural Sustainability*, *8*(1-2), 26-39.

Sugiyama, T., Carver, A., Koohsari, M. J., & Veitch, J. (2018). Advantages of public green spaces in enhancing population health. *Landscape and Urban Planning*, *178*, 12-17.

Sustainable Sanitation and Water Management Toolbox. (2018). Community Action Plan. Retrieved on 30-10-18 from https://sswm.info/humanitarian-crises/rural-settings/planning-process-tools/decision-making-tools/community-action-plan

Taylor, L., & Hochuli, D. F. (2017). Defining greenspace: multiple uses across multiple disciplines. *Landscape and Urban Planning*, *158*, 25-38.

Thiel, S. K., & Lehner, U. (2015). Exploring the effects of game elements in m-participation. *Proceedings of the 2015 British HCI Conference*, 65-73.

Thompson, C. W., Roe, J., & Aspinall, P. (2013). Woodland improvements in deprived urban communities: What impact do they have on people's activities and quality of life? *Landscape and urban planning*, *118*, 79-89.

Umberson, D., & Karas Montez, J. (2010). Social relationships and health: a flashpoint for health policy. *Journal of health and social behavior*, *51*(1), 54-66.

Van Dam, R. I., Salverda, I. E., & During, R. (2010). *Strategieën van burgerinitiatieven.* Wageningen: Wageningen Universiteit & Alterra.

Van den Berg, A. E. (2017). From green space to green prescriptions: challenges and opportunities for research and practice. *Frontiers in psychology*, *8*, 268.

Van den Berg, M., & Schoemaker, C. G. (2010). Effecten van preventie. Deelrapport van de VTV 2010 Van gezond naar beter.

Van den Berg, M., Wendel-Vos, W., Van Poppel, M., Kemper, H., Van Mechelen, W., & Maas, J. (2015). Health benefits of green spaces in the living environment: a systematic review of epidemiological studies. *Urban Forestry & Urban Greening*, *14*(4), 806-816.

Van Houwelingen, P., Boele, A., & Dekker, P. (2014). *Burgermacht op eigen kracht?: een brede verkenning van ontwikkelingen in burgerparticipatie* (Vol. 2014). Sociaal en Cultureel Planbureau.

Verba, S., Schlozman, K. L., & Brady, H. E. (1995). *Voice and equality: civic voluntarism in American politics*. Harvard University Press.

Voorberg, W. H., Bekkers, V. J., & Tummers, L. G. (2015). A systematic review of co-creation and co-production: embarking on the social innovation journey. *Public Management Review*, *17*(9), 1333-1357.

Vrielink, M. O., & Verhoeven, I. (2011). Burgerinitiatieven en de bescheiden overheid. *Beleid en Maatschappij*, *38*(4), 377-387.

Wandersman, A., & Florin, P. (2000). Citizen participation and community organizations. In *Handbook of community psychology,* 247-272. Springer, Boston, MA.

Wang, C., & Burris, M. A. (1997). Photovoice: concept, methodology, and use for participatory needs assessment. *Health education & behavior*, *24*(3), 369-387.

Whitely, P. F., & Seyd, P. (1996). Rationality and party activism: encompassing tests of alternative models of political participation. *European Journal of Political Research*, *29*(2), 215-234.

Whitney, D. (1998). Let's change the subject and change our organization: An appreciative inquiry approach to organization change. *Career Development International*, *3*(7), 314-319.

World Health Organization. (2014). Nutrition. The global burden of chronic diseases. Retrieved on 5-9-18 from http://www.who.int/nutrition/topics/2_background/en/

World Health Organization. (2018). Non Communicable Diseases. Key facts. Retrieved on 5-9-18 from http://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases

Yetano, A., Royo, S., & Acerete, B. (2010). What is driving the increasing presence of citizen participation initiatives? *Environment and Planning C: Government and Policy*, *28*(5), 783-802.

Appendix I – Interview guide

Interview guide - inwoners betrokken bij groene initiatieven

Introductie
Mijn naam is Leonie Veltman en ik ben masterstudent Gezondheid en Maatschappij aan de Wageningen Universiteit. Op dit moment ben ik bezig met mijn scriptie, welke ik schrijf bij het project PARTIGAN (participatie in het groen van Arnhem en Nijmegen). Dit project heeft als doel om samen met inwoners van Arnhem en Nijmegen te onderzoeken hoe hun leefomgeving zodanig kan worden vergroend, dat er hopelijk meer gebruikt gemaakt wordt van het groen. Zoals gezegd schrijf ik mijn scriptie binnen dit project, en ik onderzoek specifiek manieren die het aantrekkelijk maken voor burgers om mee te doen met groene initiatieven. De resultaten van alle interviews zullen dan ook zowel door mij (voor mijn scriptie) als door het project PARTIGAN gebruikt worden.
U bent betrokken bij het groene initiatief, en dat is de reden dat we u graag interviewen omdat we graag willen weten waarom mensen betrokken raken bij groene initiatieven, wat ze er doen, wat ze ervan vinden en wat het voor hen betekent.
Uiteraard is meedoen geheel vrijwillig, en we zorgen ervoor dat er vertrouwelijk omgegaan wordt met uw antwoorden, wat betekent dat ze niet naar u terug te leiden zullen zijn. Tot slot wil ik vragen of ik het interview mag opnemen? Heeft u verder nog vragen voor we beginnen?

Inhoudelijk
Wat houdt het initiatief in (bijv. doel, soort activiteiten)?

Hoe bent u betrokken geraakt (wijze waarop)?

Waarom bent u betrokken geraakt (motivatie)?

Hoe lang bent u al betrokken?

Hoe vaak komt u bij het initiatief?

Wat doet u bij het initiatief?

Wat vindt u van het initiatief?

Wat betekent het initiatief voor u?

Is het voor u belangrijk dat het om een groen initiatief gaat?

Wat maakte dat u betrokken bent gebleven (na langere tijd)?

Waren er ook belemmeringen om deel te nemen, waarom wel/niet?

Vindt u dat er meer mensen betrokken moeten worden bij het initiatief, waarom wel/niet?

Heeft u tips hoe initiatieven inwoners kunnen betrekken?

Er zijn veel verschillende manieren bekend om inwoners te betrekken bij initiatieven. Ik wil graag twee manieren kort uitleggen, en om uw mening vragen (wat spreekt u aan, wat spreekt u minder aan). Zie bijlage I voor een uitleg.

Wat moet er volgens u gebeuren om groen een meer centrale rol in onze samenleving te geven?

Wat wilt of kunt u hier zelf in doen?

Achtergrond van respondent

Wat is uw leeftijd?

Wat is uw geslacht?

Wat is uw opleiding?

Werkt u, en zo ja, wat voor werk doet u?

Kunt u uw woonsituatie beschrijven?

Afsluiting

Wilt u nog iets kwijt/iets anders delen?

Bedanken

Appendix II – Explanation of three promising approaches

Uitleg van drie potentieel effectieve benaderingen

Photovoice
Photovoice is een creatieve methode waarbij mensen alleen of in een groep gevraagd wordt om foto's van hun leefomgeving te maken. Dit kunnen foto's zijn van dingen waar mensen tevreden of trots op zijn, maar ook foto's van dingen die mensen graag anders zouden willen zien. Na afloop kan over de foto's gepraat worden. Het is soms makkelijker om bijvoorbeeld problemen met een foto uit te leggen.

ABCD-methode
Bij deze methode wordt vooral gefocust op wat goed gaat in de wijk, en op dingen die al aanwezig zijn in de wijk. In elke wijk zijn mogelijkheden, en deze worden extra benadrukt bij deze methode. Het is ook belangrijk dat dit van binnenuit gebeurd, dus dat echt op de wijk zelf gefocust wordt, en niet teveel op wat daarbuiten gebeurt.

Leefplekmeter
Bij deze methode staat het doen en ervaren centraal. Mensen gaan de wijk in om actief hun eigen leefomgeving te beoordelen met behulp van een vragenlijst en scoreformulier. Omdat ze ook echt de wijk in gaan, ervaren ze beter wat bijvoorbeeld goed gaat en wat niet, waardoor ze hier beter over kunnen meepraten.
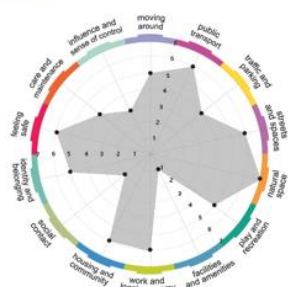
Photovoice

ABCD-methode

Leefplekmeter (place-based standard)

Appendix III - Review table of promising approaches

Approach	Description	Conditions for implementation	Advantages	Disadvantages	Literature
Appreciative inquiry [1]	The aim of the AI method is to stimulate and foster change within organisations, communities or groups by means of a positive and strength-based approach. The focus is on exploring the life-giving forces in human systems. In addition, the AI method is a participatory action research [PAR] method, meaning that all participants are co-researchers. AI could be presented in the 4D-model, that consist of four phases: 1) discovery (what are the life-giving forces, strengths, successes or values), 2) dreaming (create a vision of the future by means of stories, analyses or maps), 3) design (what is needed to put the dream into practice), 4) destiny (realization of the dream by making concrete plans).	**1**. Researcher must take the role of facilitator (listen, ask, guide and encourage) because the participants take the lead. **2**. Be careful with jargon, because all stakeholders have different levels of understanding, so use simple words. **3**. Be clear about the purpose of the approach, to avoid frustration of the participations if the approach fails. **4**. Create an environment that makes marginalized groups and minorities feel comfortable and avoid the dominance of one group over the other. **5.** Success of the approach depends on the understanding of social relationships, cultures, norms and values. Therefore, it is important that researchers are familiar with these.	**1.** Flexible approach because the process can be formal or informal, fast or slow, include a lot of people or only a few, and it can be completed in one day or in a few months. **2.** Participants are open and not defensive in this approach. **3.** AI not only prevents the occurrence of problems because of the positive approach, but also ensure sustainability. **4.** Appropriate approach in situations with a lot of different stakeholders.	**1.** Marginalized groups are often underrepresented in this approach, and when they are included they often feel not comfortable to share their stories. **2**. AI is a time-consuming process, especially for facilitating and analysing.	Nyaupane & Poudel, 2012; Whitney, 1998
*Asset-based community development [1]	The aim of the ABCD method is to strengthen neighbourhoods from inside, thereby recognizing the capacities and associations of residents to build powerful communities. Three key points of the approach are described: 1) asset based, so starting with the potentials of the neighbourhood instead of problems, 2) internally focused, only use of external resources if these tied in with the neighbourhood, 3) relationship driven, so building between individuals, groups and institutions. Implementation of the method is described in five phases: 1) mapping assets, 2) formulate plan for building relations, 3) mobilizing community and information sharing, 4) formulate vision/plan for future by representative group of residents, 5) searching for external resources.	**1.** The power of the municipality must be constrained and controlled; they could be supportive to the neighbourhood but not steering or controlling, because the neighbourhood takes the lead. **2.** Need for follow up to assure quality and continuity **3.** No use of charity funds, because the focus is on the strengths of the neighbourhood itself. **4.** Need for enabling environment because this has an influence on the capacity of communities in realising their potential. **5.** Professionals must go into the neighbourhood to have conversations with residents, for building bridges between practice and policy.	**1.** Positive approach that focus on assets instead of defects and needs. **2.** Bottom-up approach in which the community itself takes the lead and minimize the role of external resources. **3.** Increase in new relationships and social cohesion.	**1.** Although the method aspires to equal partnerships between the community residents and other institutes, in practice there often exist power asymmetries. **2.** The focus is on assets and potentials, while it seems sometimes important to also focus on problems and defects.	Davelaar et al., 2002; Mathie & Cunningham, 2003; Movisie, 2010

*Communities in beweging [1,2]	The aim of CiB is to stimulate physical activity among low SES people who have a lack of exercise. The approach is about long-term behaviour change and contains three key elements; community (internal focus, searching for strengths within community), active participation (not only participate in PA, but also in the process itself), have fun in exercise. Different phases could be distinguished; 1) preparation phase (recruitment, explore the community group), 2) acquaintanceship (introduction, building trust, exploring PA and need assessment), 3) action phase (knowledge and awareness, exercising, overcome thresholds and increase motivation), 4) evaluation phase (appreciation, prevent relapse, future plans).	**1.** It is best to recruit existing groups which have a clear bonding and motivation to participate. **2.** Important to create a supporting environment on local and regional level to stimulate continuity of CiB. **3.** There must be enough human and financial resources to be effective. Project leaders must have enough knowledge and skills to facilitate the project, and enough money must be available for the duration of the project. **4.** An integral approach must be used, with different types of experts and organisations that work together.	**1.** CiB is promising for hard to reach groups, such as low SES. They could be easily found and involved by key persons of the community. **2.** The approach is characterized by participation, low thresholds and need assessments, which has proved to be a good combination for having fun in exercise.	**1.** The preparation phase could take a lot of time, especially to create bonding among a group. **2.** Different types of experts could collide with each other. **3.** Need assessment could be hard because there is not always a clear need from the target group (low SES). In addition, they are not always informed of the possibilities for change.	Kenniscentrum Sport, 2012; Loket Gezond Leven, 2018; Nederlands Instituut voor Sport en Bewegen, 2007
Community-action planning [1]	The aim of CAP is the development of a community action plan (accomplishment, activities, resources) needed to stimulate community change. CAP is participatory with a focus on capacity building of community members to act on problems, needs and potentials. Three different phases: 1) problem/opportunity identification, 2) prioritizing solutions, 3) implementation and monitoring actions.	**1.** Motivated community (because community members are main actors in development of the plan) **2.** Assignment of a facilitator that takes the lead in assuring that announcements and appointments will be made but understand that solutions must come from the community itself. **3.** Facilitator must refrain from lecturing to the community. **4.** Facilitator must stimulate input from all groups/individuals, not only the dominant individuals. **5.** All the involved people must develop good relations and built trust to work effectively together. **6.** Use simple language and refrain from drawing and writing too much.	**1.** CAP includes local knowledge of the community that is otherwise not available. **2.** An action plan will be developed that better fit with the needs and priorities of the residents, and therefore more chance of acceptance and support.	**1.** Hard to reach consensus because there are differences in importance of issues. **2.** Requires a lot of time and resources to integrate all relevant stakeholders.	Prahar, Shaw & Takeuchi, 2013; Sustainble Sanitation and Water Management Toolbox, 2018
Domains' approach [1]	The aim of the domain approach is building community capacity (strengthen the knowledge, skills and resources of communities). This could be useful to address constraints, achievements and progress of community development programs/initiatives. The approach consists of nine domains (participation, leadership, organizational structures, resource mobilization, external linkages, problem assessment, project management, critical assessment, outside agents). Each domain is assessed and visualised in a spider web. Because of this, weaknesses could be	**1.** Important to discuss the interpretation of each domain with the stakeholders to ensure it is relevant in the context of the community. **2.** Need for a supportive and enabling environment, otherwise there could be obstacles for community development programs such as laws and regulations. For example, regulations that promote community development programs, access to funding sources. **3.** The approach must be flexible to	**1.** The domain approach helped people to be aware of their own strengths and weaknesses. **2.** The visual representation in the form of a spider web promoted active participation by residents. In addition, it is easy to understand. **3.** Predetermined focus in which participants can	**1.** It is possible that the approach might exclude relevant domains because the domains are predetermined.	Laverack, 2003; Laverack, 2005; Laverack & Thangphet, 2007

	identified and discussed, and a strategic plan could be formulated for each domain.	allow the domains to be changed so that the actual situation in a community is reflected. **4**. There must be a free flow of information and communication between the participants, so that everyone can share his ideas. **5**. Follow-up is important to help solving issues that may occur, and to resolve barriers.	inscribe their own problems and needs.		
*Four-directional framework [1,2]	The aim of the four-directional framework is to foster sustainable community development by providing a guide of how to engage not only formalized stakeholders, but also marginalized residents. It is a participatory action research method that could close the gap between municipalities or institutions and marginalized residents. In addition, it empowers residents to take the lead in their own community. The framework consist of four different elements: 1) top down (involvement of local authorities), 2) bottom up (involvement of marginalized residents and local organisations), 3) outside in (involvement of outside experience of best practices), 4 inside out (sharing knowledge with others by peer-to-peer learning).	**1**. At the start, it must be explicitly stated that the method is participatory, multi-stakeholder and holistic to weaken the dominance of municipalities or local officials. **2**. An environment must be created in which marginalized residents feel comfortable to share their ideas. It is suggested to include methods that go beyond traditional ways, such as Outcome Mapping or Appreciative Inquiry. **3**. It is important that ideas and initiatives from residents are supported by local institutions to ensure sustainability over time (e.g. for financing issues).	**1**. Residents are in the lead and take charge of their own future. **2**. Peer-to-peer learning is an important element because residents are empowered and take ownership. In addition, learning from peers could accelerate the transfer of knowledge and skills. **3**. Social relations are strengthening, and new social networks are developed.	**1**. It takes a lot of time to build capacity and to invest in social networks.	Seymoar, Ballantyne & Pearson, 2010
*Kijk! Een gezonde wijk [2]	The aim of this participatory neighbourhood walk application is to create healthier neighbourhoods. The app is developed by and with residents and allowed residents to map positive and negative aspects of their neighbourhood. By collecting these data, residents are activated and involved to the development of their neighbourhood, therefore it is Citizen Science. Residents walk through their neighbourhood with the app and report the things that they found remarkable. By doing this, they could 'win awards' within the app. All the measurements (anonymous) could be directly seen on a website that all stakeholders have access to.	**1**. The focus must not only be on the result, because the process is at least as important (e.g. social contacts, development of skills). **2**. Involvement of game-elements in the app is important for motivation. **3**. Consider the different (cultural) needs and technical skills of the participants, especially because the target population are vulnerable groups. **4**. Low SES people are more willing to use the app in a group, instead of individual. **5**. Invest in 'ambassadors' that could tell other residents about the app. Residents are more willing to participate if they know someone that is enthusiastic about it.	**1**. A mobile application could be more approachable compared to traditional ways of citizen participation, especially for low SES residents. **2**. Participants could experience new elements of their neighbourhood (e.g. a park they did not know of). **3**. Interactive and creative approach.	**1**. Low literacy could be a challenge for using the app, therefore other methods could be adding next to it. **2**. Low technical skills and not having a mobile phone could be a challenge.	Kijk! Een gezonde wijk, 2017; de Zeeuw & den Broeder, 2018

*Photovoice [2]	The aim of photovoice is to enable vulnerable people to identify and represent their community with a photographic technique. In addition, it encourages critical dialogue and bring about change by reaching and influencing policy makers. The process starts with a training or workshop in which camera use and ethics will be discussed. After that, people are asked to take pictures from their living environment (this could be both positive and negative pictures). In the end, participants are asked to choose some pictures they would like to talk about in a discussion (e.g. why did you make this picture, what is the story behind it).	**1.** The approach should be participatory during the whole processing, meaning that participants are involved in each phase. **2.** Both participants and researchers need a training or workshop beforehand. Participants must learn how to use a camera, researchers must know how to facilitate the process. **3.** A safe and supportive environment is needed in which the pictures could be discussed, so that participants feel safe to express opinions and ideas.	**1.** The method enables researchers or policy makers to get insight into the perspective of (vulnerable) participants of the world, which is often different than expected. **2.** Photovoice is a creative and fun method of communication that requires no reading or writing skills. In addition, pictures could be more powerful than words. **3.** The method can give insight into both needs and assets, in contrast to more traditional methods that captures most often only needs. **4.** Sharing and discussing pictures could stimulate social interaction and build relations. **5.** Highly flexible method that could be easily adapted to different goals, groups or communities. **6.** Using camera's in a project could stimulate feelings of pride and ownership.	**1.** There is always a form of personal judgement that could influence the pictures made. Therefore, it could be hard to discover what has been left out. **2.** Pictures are difficult to analyse and summarize	Community Tool Box, 2018; Wang & Burris, 1997
Place game [2]	The aim of the Place Game is to improve public spaces by placing evaluation and analysis of a public space in the hands of it residents ("community experts"). The tool can identify strengths and weaknesses of any public space (e.g. park, market, street). The Place Diagram is used to evaluate and analyse public spaces, and consist of four themes; access and linkages, comfort and image, uses and activities, sociability. During a site visit in small groups, these themes will be observed and evaluated. After this, the small groups come together to share and compare results and to determine directions for improvement.	**1.** An important perspective to start with is that the community is the expert. This could create a sense of community ownership during the process. **2.** Only develop a design for the public space is not enough, because a place must be created in which people feel welcome and comfortable. This includes more than just adding physical elements. **3.** It is important to involve other partners for support.	**1.** Place Game is easy to conduct for everyone, because no knowledge is required.	-	Placemaking Plus, 2017; Project for Public Spaces, 2016
Place standard (leefplekmeter) [2]	The aim of the place standard is to maximize the potential of a living area to support health, wellbeing and quality of life. The quality of the living area is assessed,	**1.** The focus must not be on reaching a certain score, but on the experience of the living area.	**1.** Flexible approach because it could be used by: - all kind of people (e.g.	**1.** Difficult to use for people with low literacy. **2.** Sometimes overlap	Gezond in…, n.d.; National Health Service Scotland,

	and strengths and weaknesses could be identified. These stimulate discussions and the development of an action plan. The tool could be used by different groups. The place standard consists of 14 themes that will be assessed. There is also space to substantiate the scores. The results could be plotted to create a quick overview of strengths and weaknesses.	**2**. The area of interest must be clearly defined, and all participants must be familiar with it. Therefore, a site visit is recommended. **3**. If one or more themes seems not relevant for the area of interest, it could help to think about the area as part of a larger place. **4**. The method must be seen as a part of a process, not as the end of the process. **5**. Be clear at the beginning about what could and could not achieved with the method in to avoid false expectations.	residents, community groups, local authorities, public sector, developers, designers) - all kind of areas (e.g. existing places, new places, streets, neighbourhoods, whole town) - in many contexts (e.g. workshops, digital, group dialogues, face-to-face) - different phases (early stages, design and development stages, continuous improvement) **2.** The method encourages people to be involved in decision making about their area **3**. Implementation of the tool is straightforward.	between themes. **3**. Scoring could be complex within a theme if one aspect scored well (e.g. walking) and another poorly (e.g. cycling). **4**. Engaging a representative group of people can be a challenge.	2018; Place Standard, n.d.; Platform31, 2018
*Value based approach 1	The aim of the value-based approach is to get insight into local values that people have (e.g. what is important in their lives), because this influence the perceptions and acceptances of local interventions/programs. The approach recognizes the importance of including subjective and qualitative dimensions, which could differ between individuals and cultures. Although the value-based approach is more a perspective, the implementation of it in the literature consist of four phases: 1) value assessment (what matters most), 2) vulnerability assessment (where are we now), 3) developing adaptation plan (what can we do about it), 4) implementation (are we there yet).	**1**. Ensure that there are both group activities and individual activities, because some people prefer to share their opinion in a group, while others prefer to keep it for themselves. **2**. Providing equal weight to scientific/expert knowledge on the one hand, and traditional/local knowledge on the other hand to generate community interest. **3**. Approach is especially suitable for marginalized communities with limited resources. **4**. Be aware of the risk of 'planning burnout' by finding a balance between standard community workshops and non-standard outreach activities.	**1**. Integral approach that could help to avoid pitfalls in planning process because of insight into (cultural) values. **2**.Approach is effective in attracting people, dealing with limited resources and enhancing the adaptive capacity.	**1**. Lot of different and conflicting values, which could make it difficult to formulate an adaptation plan.	O'Brien & Wolf, 2010; Reid et al., 2014

Legend *= especially designed for low SES people; 1= more theoretical approach; 2= more practical approach