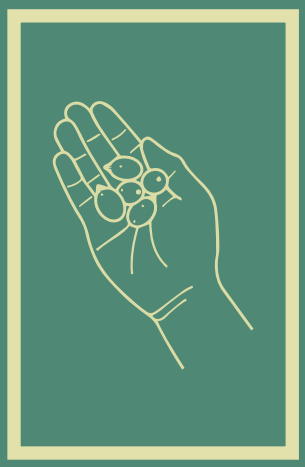
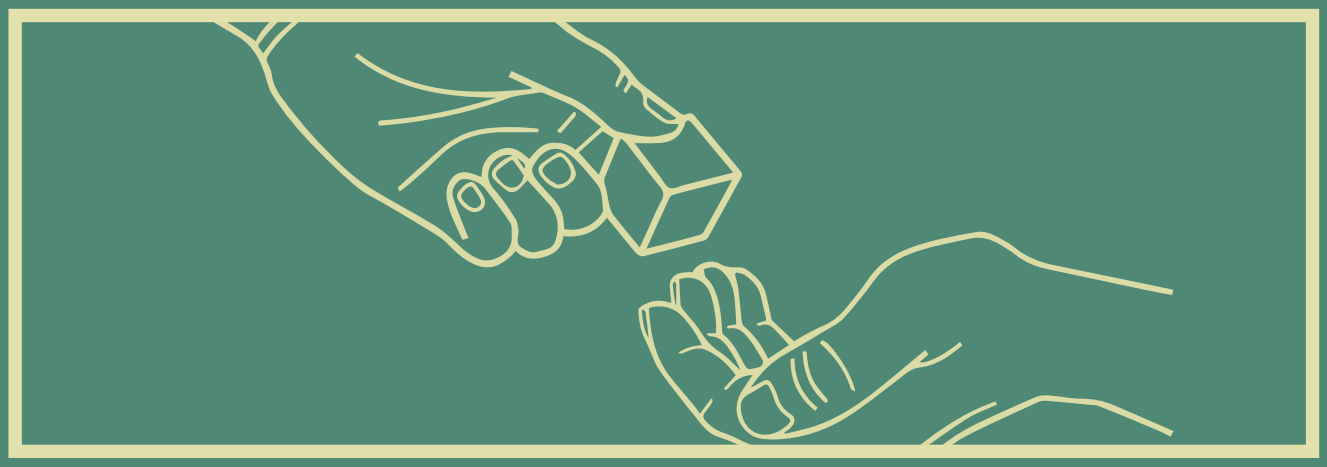


GROWING THE MOVEMENT



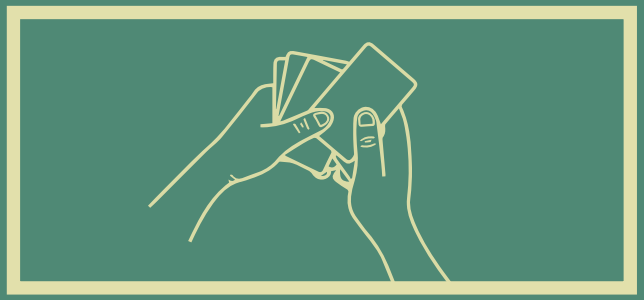


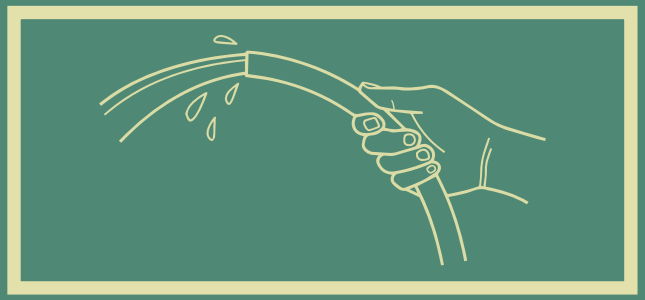




Supporting citizens in joining the bottom-up participation landscape







Tijmen van Haelst | Design for Interaction

Master thesis, TU delft

"We should preserve every scrap of biodiversity as priceless while we learn to use it and come to understand what it means to humanity."

Edward O. Wilson

biologist, naturalist, and writer.

Master thesis
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Author
Tijmen van Haelst

Student number
4307461

Chair
Dr. Bendor, R.
Faculty of Industrial Design Engineering
Design Conceptualization and Communication section

Mentor
Dr. ir. Jaskiewicz, T.J.
Faculty of Industrial Design Engineering
Design Conceptualization and Communication section

Collaboration with
Cerian (aka Jenny) van Gestel
Guerrilla Gardeners

Preface

I started my study career in architecture. During this study I gained a lot of knowledge of architecture and design, but there was a constant feeling that something was missing. It struck me that a lot of architecture was designed without including the actual user in the design process. I soon noticed that I want to be closer to the actual user in the design process. Looking back at my graduation project, this is almost exactly what I ended up doing. I am grateful that the study and this report have given me the opportunity to pursue my own ideals. However, I couldn't have done it alone and got help from a wonderful bunch of people.

First of all, I am thankful to all the citizens, initiators and civil servants who were willing to share their story and honest opinions about their experience of the biodiversity initiative landscape. This project would not have been possible without their contribution.

I would like to thank Jenny from Guerrilla Gardeners for the opportunity to experience a biodiversity organization first hand. Throughout the project Jenny provided me with a lot of knowledge, support and experiences. I find it incredibly inspiring to see what you and your organization do for the biodiversity in the Netherlands. Keep doing what you are doing and call on me next time you need a volunteer!

Thanks to my chair Roy, I really valued our feedback sessions in which you always managed to be incredible insightful and reflective. Your clear and structured sense of supportive feedback really helped me along with the project. I am also grateful for assisting me in finding a graduation project. It was a rather bumpy ride but you regularly helped to smoothened it out.

I would also like to thank my mentor Tomasz, who supported me throughout the project. In addition to giving good feedback, you always managed to inspire me with new ideas and thoughts. Your enthusiasm for participation has regularly sparked my own and made me more exited for the project.

Then to all the people 'outside' of the project that helped me through the graduation. First and foremost, Aliena. Thanks for standing by me during the project, listening to my doubts, helping me deal with stress and offering distractions when I needed it. Thanks to my family for supporting me during my studies, internships and personal life the past years. And of course thanks for my friends to provide me with the much needed breaks every now and then.

Abstract

Through bottom-up initiatives citizens have the ability to adapt their environment to their own desires and ideas. It is a way to take power and create a city that is truly based on what the residents want, rather than it being opposed on them.

Right now there is a growing movement in the Netherlands where municipalities want to embrace bottom-up initiatives and give the citizens the opportunity to contribute in shaping the city through participation. Citizens are invited to express their opinion or to receive support for their own ideas.

The citizens themselves have to take action to make bottom-up participation happen. However, many citizens are not familiar with the possibilities. As a result, only a small number of citizens participate. Most of the power of participation falls in their hands. This leads to outcomes that are non-inclusive and are often only beneficial for this select group of citizens.

There is, however, a growing group of people who are indeed interested in bottom-up participation but do not act on it as they experience too much resistance and too many obstacles. An opportunity can be found in enabling these interested but inactive citizens to get familiar with initiative information and take action towards durable bottom-up participation. The aim of this project is, therefore, to carefully navigate the present obstacles and explore how to address them with design.

The exploration consists of iterative design sprints combined with the research through design approach, which allows me to chart the citizens participation landscape in a practical and experimental way.

Research through design is the main approach of the thesis in order to get as close to the experienced obstacles as possible. On the basis of fast iterative design sprints several prototypes are tested that actively involve stakeholders. The prototypes are tools to navigate deeper into the context, gain insights and create a clear foundation for the final design.

The knowledge gained through the explorative design sprints ultimately give shape to the following design goal: Design a tool that can enable interested but inactive citizens to get familiar with initiative information and take action towards a durable initiative.

The goal results in Growing the Movement, which is a new participatory tool that guides interested citizens through the biodiversity initiative landscape and its possibilities. Through the tool citizens will acquire a personalized set of cards. The cards will guide them step by step through the multitude of information and invites them to take action in form of biodiversity initiatives. By interacting with the cards the user will be introduced to the possibilities of bottom-up participation. They will be educated and supported in taking biodiversity action to influence their own local environment.

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Introduction

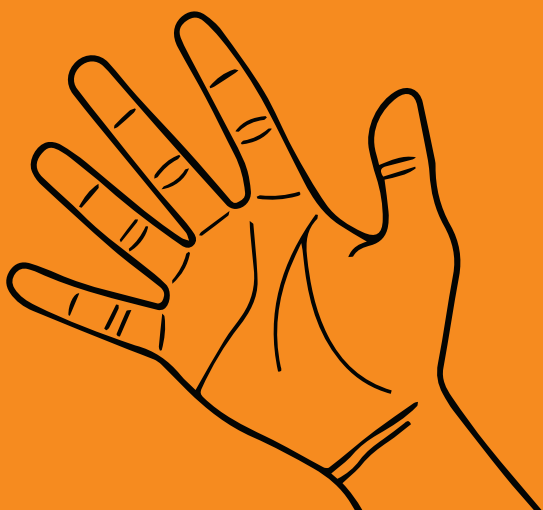
Context and relevance of project

The citizens are the daily users and inhabitants of a city. They live their life here and spend the majority of their time surrounded by the urban landscape. While they are the active user of the city they rarely have an actual say about it. Isn't it strange that their environment is mainly determined by professionals, policymakers and planners? Shouldn't the citizens have more democratic power and see their own wishes and ideas reflected in their own environment?

Right now there is a growing movement in the Netherlands where cities want to embrace participation and give the citizens the opportunity to contribute to shaping the city themselves. There are some municipalities, like Rotterdam, Eindhoven or Amsterdam, that are actively trying to implement participation policies and projects. They try to actively receive the opinions of citizens, to assist citizen initiatives where possible and to allocate a budget to finance citizens' ideas.

'Buurtbudget', 'Citylab010' and 'WijAmsterdam' are some examples of these projects. Dutch municipalities are aiming to bring politics closer to citizens and collaborate with residents in order to design more livable public spaces, more inclusive policies and better services overall. Through participation, citizens and policymakers interact with each other and thus forming a better relationship between the two perspectives. It allows citizens to express their needs and results in a more democratic and inclusive city making.

Despite the efforts, actors of the participatory city making landscape are still experiencing many obstacles and challenges which make it hard for citizen initiatives to come to fruition. This thesis aims to get a better understanding of participatory city making. It will shed light on the experienced obstacles and will address them with design in order to contributing to participatory city making and to grow the movement.



Goal of the project

The goal of this project is to **explore how design can help citizens living in Dutch cities to have a say in their own environment and collectively re-image their local surroundings.** The gathered insights will converge in a product concept, aiming to support citizens to join in active bottom-up participation.

The initial research questions of this project are:

What are bottom-up citizen initiatives, and what are the positive and negative impacts of them on society?

What are the current barriers and obstacles encountered by interested citizens in the participation process?

How can design contribute to the participatory landscape and address current experienced obstacles?

Project approach

The graduation project will be executed in four phases: Discover the citizen initiative landscape; iterative design sprints; design refinement and project evaluation (see figure 1.). This approach allows to create a strong context scope and allocate most time towards the research through design exploration of phase two.

Phase 1 Discover the citizen initiative landscape

The first phase will focus on defining the overall citizen initiative landscape. Through explorative interviews and literature research obstacles that are present will be explored. Stakeholders will actively be involved in this discovery phase to understand what they know, feel and experience. The discovery phase will be concluded with a clear scope to be explored further.

Phase 2 Develop by iterative design sprints

This second phase focuses on addressing the obstacles found in the discovery phase. Design sprints in combination with the Research through design will provide the basis for this approach. The obstacles to address will be selected according to the results and insights of the previous iteration. The iterative design process will allow to create, test, analyse, and refine ideas quickly. Rapid prototyping allows for quick gathering of useful data and involve stakeholders effectively (Eby, 2019). Every addressed obstacle can start a quick iterative design sprint of its own, using research through design with the aim of answering research questions and gathering knowledge on that specific obstacle encountered. The sprints will possibility be interconnected and inevitably some obstacles need more time than others. The sprints therefore have a time scale that is flexible to support this adjustability. The iteration and research through design will provide enough insights and knowledge to form a final concept.

Phase 3: Design refinement

This phase will focus on refining the phases and combining them towards a final concept. Each aspect of the evaluated prototypes will be analyzed and gathered insight will form the basis to create a final design concept.

Phase 4: Evaluate the project

The refined design concept will be evaluated with users and experts from biodiversity organizations. It will be tested to see if the concept evokes the envisioned goal and effect. Based on these insights, recommendations will be formulated to further develop the concept. The results from the final evaluation will show if the concept supports the citizens in the participation landscape.

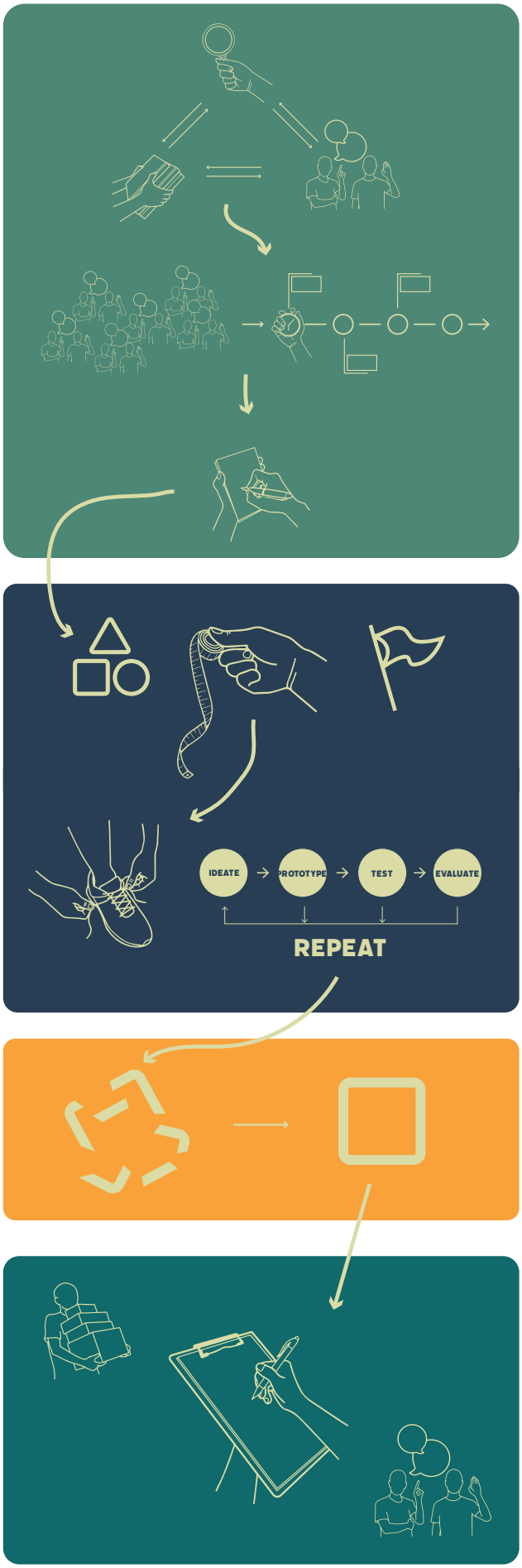


Figure 1. Phases of this project visualized

Phase 1 Discover
Problem exploration & research

Explore obstacles through Desktop research and interviews with actors of participation landscape.

Timeline creation and biodiversity context exploration

Interviews and generative session with bottom-up biodiversity initiatives to create a general timeline. Desk research and explorative interviews with biodiversity actors to create a clear image of the context.

Analysis of research

Analysing insights from the research and exploration.

Phase 2 Develop
Iterative design sprints

Iterative design sprints including ideation, generative methods such as brainstorms, drawing and prototyping. Followed by real life test and evaluations. This phase is to be repeated any number of times necessary to form a viable final concept.

Theoretical frameworks

Theoretical frameworks will be established throughout the design sprints to support the iterations. This framework will help create a foundation for concepts and justify design choices.

Phase 3 Combine
Final concept

Translating the concepts and insights of the iterative design sprints into a final concept.

Phase 4 Evaluate
Test with users

Evaluate the concept by testing a concept prototype with citizens.

Evaluate with experts

Evaluate the concept by presenting it to experts.

Report structure

The discovery phase will be elaborated in the first two chapters. Chapter one will explain a general context research of the Citizen participation landscape. Chapter two will explore a more narrow scope and will research the relationship between citizen participation and biodiversity action.

The development phase forms the bulk of this project. This phase is fully expressed in chapter three. In this chapter the various design sprints will be explained.

The combine phase will start after the conclusion of the design sprint. The findings from the design sprints will be combined into the final concept. This final concept will be explained in chapter four.

The evaluation phase will take shape in chapter five. This chapter evaluates and validates the final concept. The evaluation will be followed by the final conclusion and recommendations for future design.

Chapter 1

Discover the citizen participation landscape

This chapter provides a broad understanding of the citizen participation landscape and its characteristics. It gives two participatory examples that show the different approaches to participation. Three main obstacle themes, experienced by actors of the initiative landscape, are explained and discussed.

Research questions

The focus of this chapter is to answer the following questions:

- **What are bottom-up citizen initiatives, and what is the positive and negative impacts of them on society?**
- **What are the current barriers and obstacles encountered by citizens who are interested in joining the participation process?**



Exploration of participation

In this chapter, I will provide a contextual research on citizen participation. This chapter includes a method of literature research to explore the added value of this project, gain general knowledge and identify relevant questions to serve as parameters for the second method: Interviews with actors of the citizen participation landscape.

Literature research

Literature research will contribute to create a foundation for this project. Conducting desk research will allow me to define the citizen participation landscape and the impact it has on society. Through literature research general knowledge of the landscape will be generated. This will contribute to identify relevant questions for the interviews.

Methode

The approach to literature review consists of collecting papers for the desk research, including classic literature, recent literature and design papers. Relevant sources are found through the TU Delft Library, TU Delft repository and Google Scholar with the following Keywords: citizen participation, participation approach, participatory design, community participation methods and city making.

Parallel to the desk research, I will review existing participation projects. These projects provide a realistic example of the obtained information.

Result

This method resulted in a general overview generated through fourteen scientific papers, two example initiatives and a participation nota by Eindhoven municipality. These sources are mainly found by following citations from useful papers or other graduation projects on a similar topic. Insights that seemed relevant were flagged and immediately incorporated into text focused on the following topics: Definition, Impact, participation approach, obstacles, forms of participation and participation design.

Discussion

The literature review showed how extensive participation is. Policies and approaches are often location dependent and differs per country or even per municipality. Despite the fact that there are many papers on participation, a striking number of these papers are based on top-down approaches. The citizen's perspective is often missing. A few obstacles have already been identified through the research, but the more personal experiences and obstacle experiences of real actors of the landscape are still missing. For this reason, the method of interviewing was adopted as an addition to the research for this first chapter.

Interviews with actors of participatory landscape

For further elaboration on the interviews and their results see appendix A.

The interviews serve as a method to fill the gaps in the overview created by the desk research and explore the various perspectives of city participation actors. The perspectives include: the citizens, the organizations and the municipality's side. The Interviews contribute by getting insights on the personal experiences of participation. Conducting interviews will allow me to explore contextual experiences and real life examples.

Methode

The interviewees are selected through purposeful sampling, trying to cover multiple perspectives within the participation landscape. The interviews are semi-structured and explorative (see appendix A for interview guide). The interview mainly invites interviewees to describe their experience of acting in the participatory landscape and what kind of barriers or obstacles they encountered so far. Insights from the interview are collected by analyzing quotes, finding similarities and clustering them in groups in order to form a clear overview.

Participant sample

A total of eight participants are recruited; three females and five males between the ages of 25-65. All participants lived in the Netherlands and are present actors in the participation landscape, including biodiversity organizations, CPO (Collective private client) project participants, civil servants and new initiative members. See appendix A for further elaboration on the participants.



Setting

Data is collected during four interviews online and six at the offices or houses of the interviewees. All interviews are conducted with each actor separately, except for one occasion where a brainstorm session is held with three civil servants.

The interviews take between 30 minutes and 1 hour, depending on the participant's availability. The online interviews are recorded using zoom recording, and the offline interviews are recorded by taking notes.

Result

The insights from every interview where gathered in the form of insight cards. These cards where then sorted and processed to form the following clusters: Municipality communication, constraints and barriers, Long term commitment, Internal communication and inactive citizens. Every cluster consists of insight cards from different interviews. For full overview of the insight cards see appendix A.

Discussion

The insights cards provide an insight of the personal and local experiences of the Dutch participation landscape. They help to bridge the gaps that were present in the overview, created by the literature review. The insights card will further support the desk research by identifying the obstacles that are present in the citizens participation landscape.

Citizen participation explained

Participation is location specific and the approach differs per municipality. Nevertheless, on the basis of the literature research, This general overview can explain the fundaments of citizen participation.

Definition

According to Sanoff (2000) the idea of participation can be traced to preliterate societies. City participation is of a more recent origin. It is commonly associated with the idea of involving local people in social development. 'Citizen participation' refers to citizen involvement in public decision making. In different interpretations, 'citizens' may be either individuals or organized communities. Participation is something that is supported by local authorities and provides unique opportunities for increasing public awareness to a variety of community issues.

Why participation?

Organizational

Participation is a way for policy makers to bring politics and decision making closer to the people that the decision are being made about. It is essential to involve citizens more closely in the development of the city. Participation allows those who are subject to decisions to take part in decision making. Reason for a municipality or the government to implement participation are: citizens will acquire a higher trust in government (Slingerland et al., 2020), it can give a more clear insight on the wishes of citizens (Participation Eindhoven, 2021), it can contribute to actual better and more durable policies (Schram et al., 2018) and it overall improves the livability of a city (Dutch government, 2022). Most importantly it allows citizens to have a say in their own surrounding and see their own whises and ideas reflected in their local environment (Sanoff, 2000).

Social

At the social level, citizen participation has the power to counteract the growing individualization in society (Participation Eindhoven, 2021). Through participation activities, citizens meet and engage with each other, social networks are built which, in turn, increase the local social cohesion (Dekker & van Kempen, 2009). Through participation citizens increase their interpersonal relationships and experience a shared sense of identity and values (Participation Eindhoven, 2021). This allows social groups to function more effectively which increases the social capital of the neighborhood or city. Participation allows citizens to be more closely involved with policies and changes in the city. They feel that they are being listened to and have a say in these changes . This results in an increased feeling of ownership and connection towards their environments (Dekker & van Kempen, 2009). In turn, this creates a sense of nurturing, caring, protection and a feeling of home towards the citizens' surroundings (Wang et al.,2006).

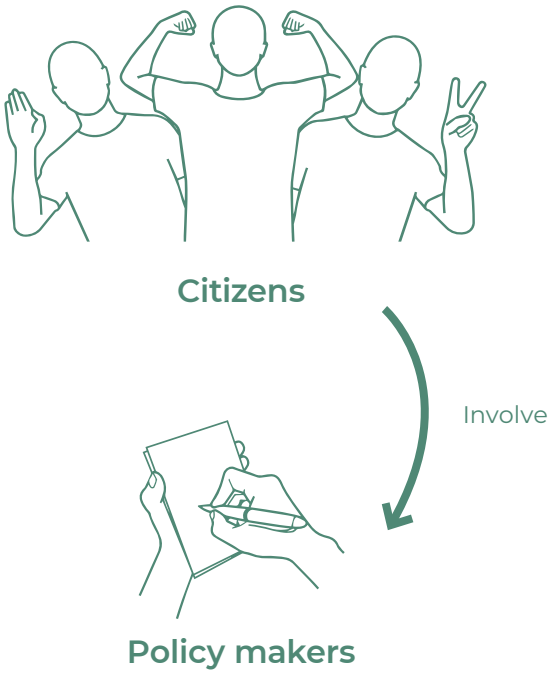


Figure 2. Participation diagram

Top-down and bottom-up

Citizen participation generally follows two main approaches. one is top-down, meaning it is initiated by a governmental body. The other is bottom-up meaning its initiated by citizens.

Top-down

In the current citizen participation landscape a top-down approach is often still applied. The designer or institute wants the user or citizen to participate rather than the other way around (De koning et al., 2018). According to Cornwall (2008), There is a clear difference between participation places that have been created by citizens themselves or places that have been created by the community development workers. These are often structured and owned by those who provided them.

Bottom-up

Bottom-up citizen initiatives are approaches that have been introduced to tackle local problems. Bottom-up means that they are not initiated by the government or institutions, but by citizens or end users. They ar executed by local actors which allows the citizens to define their own goals and how to achieve them. The bottom-up citizen initiatives may begin as small and at the local level, but have the ability to scale-up and eventually have impact on city, regional, international or even global level (Bettencourt, 2022).

According to de Koning et al (2018),The ideal situation for initiatives can be found in the combination of both bottom-up and top-down. Bottom-up initiatives need the support of the government to become durable initiatives.

Ladder of participation

Within the bottom-up and top-down approach there are different scales of responsibility and distribution of power in which citizen participation takes place. Arnstein (1969) put these distributions into a scale as can be seen in Figure 3. This “ladder of participation” shows the identification of eight types of participation. They have been put on a scale to show the amount of ‘power’ the citizen has on the end result of a decision making process.

On the first scale, the ‘non participation’, administrators mislead citizens into believing they are given power in a process that has been intentionally manufactured to deny them power.

On the second scale, the ‘Tokenism’ the citizens have no influence in the decision making process. They are only informed or educated about policies being carried out by a government or municipality.

On the third scale, ‘Citizen power, citizens have the greatest decision making power and governments take a more facilitating role.

It should be mentioned that this classification makes it appear that there are clear boundaries between different forms of participation. In reality, the forms and types of participation overlap and are of a fluid nature.



Citizens control: Citizens have the idea and set up the project.

Delegated power: A goal created by a facilitator but resources and responsibility are given to citizens.

Partnership: Citizens have direct involvement in decision making.

Placation: Citizens shape ideas, but the final decision sits with the facilitator.

Consultation: Citizens views are sought but decisions are made by the facilitator.

Informing: Citizens are informed on decisions but have no opportunity to contribute.

Educating: The assumption that the citizens are passive recipients is made.

Manipulation: The illusion of participation when actually power is denied.

Figure 3. Ladder of participation (arnstein, 1969)

Two initiative examples

The Eindhoven municipality adopts different practices, ideas and even existing citizen initiatives to support citizens participation. To clarify and illustrates the challenges of citizen participation I selected two representative examples

“Residents know better than anyone what is going on in their neighborhood.”
- Yasin Torunoglu, Alderman

Top-down

Buurtbudget

Buurtbudget’s vision is that local residents get a say on what government money is spent on. In the first round, residents of Oud-Woensel were invited to share their wishes, ideas or dreams. In the second round, clear goals and projects were formed in co creation sessions with the residents lead by the municipality. In the final round, these goals were presented in public. All residents of Oud-Woensel were given the opportunity to vote on the project they would like to see turned into reality.

Buurtbudget shows that Eindhoven is activily engaging with its citizens. Although Eindhoven is well on its way to embrace participation, this approach is still very top-down. Buurtbudget’s focusses on how the municipality can gather the opinions of residents about their own policies. This form of participation only reaches the height of Tokenism on Arnstein’s ladder. Fortunately, Eindhoven is aware of their approach and are currently taking steps to embrace and support Bottom-up initiatives as well (H. Koolen, personal communication, 2022). A good example of this is “adopteer een straat” which is shown on the next page.



Figure 4. A ballet box to vote on the ideas pitch by local residents. (Zeewaardig, 2022)



Figure 5. Citizens participating in the several phases of Buurtbudget. (Zeewaardig, 2022)

“Our motto: working with volunteers on a beautiful, clean and green Eindhoven.

- Kees Lepoeter, Founder aes

Bottom-up

Adopteer een straat

“Adopteer een straat” is a volunteer initiative that was started in 2014 by a single resident who took over some of the tasks of the municipality. He was of the opinion they were not doing enough to keep the streets clean and beautiful. The initiative has gradually grown and turned into a network of enthusiastic volunteers. Residents of Eindhoven can, alone or in a group, "adopt" a certain area or street. They help with cleaning and/or keeping the adopted area green (K. Lepoeter, personal communication, 2022).

Adopteer een straat shows how local residents can take care of their own environment and issues and even take over governmental tasks. It shows that through local activities and cooperation between initiatives, citizens’ engagement can be mobilized. It is a fitting example of a working bottom-up initiative. Despite it being bottom-up it does receives support from the municipality. They provide "adopteer een straat" with meeting facilities, garden and waste equipment and sporadically sponsor plants for bigger scale events. Despite this support, all decision-making still remains with the initiative and they themselves are in charge of what happens, setting the initiative up in the citizen power category of Arnsteins ladder.



Figure 6. Citizens cleaning up their own street with the tools provided by adopteer een straat. (adopteer een straat, 2022)



Figure 7. Signs to communicate to the municipality to not clear these guerrilla gardens. (Adopteer een straat, 2022)

Obstacles for participation

The insight cards from the interviews (see appendix A) result in the finding of various obstacles. Despite most actors having a different perspective and experience of the obstacles, I could establish three clusters that form the base of obstacle experience in the participation landscape. These three main clusters are: inactive citizens, communication with municipality and long term commitment. These clusters are further supported by insights from the literature review.

Inactive citizens

According to H. Koolen (2022), area coordinator of the Eindhoven municipality, not all citizens feels compelled to join in participatory city making. Generally, he does not recognize this as a problem, but states that there are people who are indeed interested in participating. However, these people often cannot do so because they experience barriers or obstacles.

Unaware of the possibilities

The participatory city making project distinguishes four roles in the city making landscape. They name: The citizen, The entrepreneurs, the officials and the third sector. The citizen is described as "a person with an initiative that is about a specific area in a neighborhood, a square, a garden, a park, etc." (PCM, 2019)

In general, this entails two kind of citizens. The citizens who are familiar with the fact that they can put forward an initiative and have the time to implement it and the citizens who have financial interest in decision making. These two citizen types are often called "the usual suspects" of the participatory landscape (PCM, 2019). Citizens who do not belong to this group generally only approach the municipality if they have a problem, question or complaint (H. Koolen, personal communication, 2022). They do not know that they can approach the municipality with their ideas and plans. These residents are not familiar with the city making principle or the fact that they can enhance and change their own environment themselves (Slingerland, 2022).

Power inequality

As a result of the unfamiliarity, the power of city making falls into the hands of a selective group of initiators. The Initiators generally are from the same social class and are often not representative of the entire neighborhood or district (Slingerland, 2022). On top of that, top-down participatory processes often address only these initiators. Other citizens do not necessarily feel addressed or invited to participatory activities and often do not think that they are the target group for a consultation evening. These people also often think that they do not have the required skills to, for example, come up with new ideas. For citizens who want to participate but have not done this before, it can be more difficult to do so. It can feel daunting if they know that everybody around the table is already very experienced. (PCM, 2019)

Practical considerations

The consideration to participate can be affected by practical matters. For example, time can be an issue. The date of participatory activities may not match the citizens schedule or the amount of time acquired for the activities might be too long. Another example: the accessibility of the activities; are they physically accessible or digitally accessible. The language the activities are being held in is often also a barrier, this is especially important with immigrants (Dekker & van Kempen, 2009).

Unrepresented citizens

The unfamiliarity, municipality approach and practical considerations result in almost all of the power falling in the hands of the usual suspects which leads to outcomes that are non-inclusive. These outcomes often are beneficial for the usual suspect but not necessarily the neighbors around them (F, Jonkers, personal communication, 2022). This creates an inequality with which only the usual suspects reap the benefits of the participatory landscape. This can mean that certain voices from the neighborhood are not heard and that outcomes of such projects can exclude a certain group of citizens (Dekker & van Kempen, 2009).

Communication with municipality

The second cluster of obstacle experience is the relationship between the citizen and the municipality. There seems to be a gap between the citizen and the civil servant. Both perspectives experience various barriers and obstacles towards eachother.

Enthusiasm

Many municipalities in the Netherlands are showing a lot of enthusiasm towards participation. Although the approach is top-down focused, Civil servants are eager to work more citizen oriented (H. Koolen, personal communication, 2022). Several municipalities like, Eindhoven, Amsterdam and Rotterdam are working hard to create channels to get in contact with citizens. However, communication between initiators and municipalities is often still not optimal. In four out of six interviews done with initiators it appeared that they have had bad experiences while interacting with the municipality.

This group of enthusiastic civil servants is often too small to accommodate the entire municipality and experiences way too much workload (van Gestel, personal communication, 2022).

Trust

Even though studies show that civil servants are more trusting towards citizens then the other way around, civil servants often do not trust citizens when interacting with the government (Åström,2020). Civil servants generally first want to see some evidence of the capability of the citizen before giving a certain amount of responsibility towards them.

H. Koolen (2022), area coordinator of the Eindhoven municipality, says that citizens also do not trust civil servants. Citizens are sceptical towards organizations like municipalities. People view the organization as very bureaucratic and think that the processes of municipalities are generally slow. Therfore, citizens are hesitant about the cooperation with the municipality. They do not have the idea that they will be taken seriously and therefore already feel a barrier before getting started.

Transparency

It is important that the municipality keeps the initiators clearly informed about the possibilities of current projects. Transparency about expectations, Budget and possibilities is crucial to avoid disappointed citizens and to keep them motivated to participate in future processes (De Koning et al.,2018). If things suddenly turn out differently for the initiators, a project can suddenly stagnate after all the time and effort invested. According to H. Koolen (2022), This also works the other way around. If the transparency about the possibilities is not clear the wishes of the citizens are often way higher than realistically possible. Civil servants are afraid that they cannot live up to these wishes and experience that as both a barrier and an excuse to not approach citizens.

Municipality work structure

According to De Koning et al. (2018), Initiatives are fluid processes that are self-organized and do not follow fixed patterns. The interactions between the people who participate in an initiative are often local and time specific. Each initiative is too specific to be handled according to a single framework. As a result, there is no clear legal definition of how an initiative should or can be handled.

On top of that, H. Koolen (2022) mentions that most civil servants strictly follow their civic working patterns. It is hard to deviate from this existing pattern and come up with a new one specified for a certain initiative. “That’s not my responsibility”, “that’s not possible” or “it doesn’t fit our project guidelines” are the responses that initiators can expect because of this problem.

This work structure ensures difficulties involving and engaging the most resistant actors, both from the public government and the initiatives, as well as empowering the most active stakeholders. (De Koning et al., 2018)

Long term Commitment

The third cluster of obstacle experience is long term commitment. Emphasis is placed on encouraging and supporting citizens to take initiatives. However, these initiatives are often not supported to develop into a durable initiative. Although they can serve as a temporary effort, there is still a missed opportunity for long-term goals.

Secondary activities

Initiative communities grow from idealism but often have a hard time to become a durable initiative when the first challenges arise and the enthusiasm has disappeared (Slingerland, 2017). Secondary activities will have to be performed to evolve the initiative into a sustainable initiative. The initiators suddenly have to take different actions than they did in the first instance. (Slingerland, 2017) Motivation diminishes and people quit the initiative. Decreases in the group can then, in turn, have an even more demotivating effect (De koning et al., 2018).

Different goals

It is rarely the case that all initiators that work together on a initiative project share the same motivation or goal. Some do it to improve their surroundings, others might do it to be part of a community and for some initiators, social contact is the leading motivation for participating in an initiative (De Koning et al., 2018).

After some actors have achieved their particular goals they lose the incentive to keep the collaboration alive (De Koning et al., 2018).

Design and participation

With the exploration of the obstacles within the citizen initiative landscape the question arises: could design contribute to improving this landscape and help overcome some of these obstacles?

The methods of design are valuable for general complex problem solving of societal issues. They have the ability to handle ill-defined' problems, ambiguity and uncertainty like these obstacles in the initiative landscape (De Koning et al., 2018).

Surely design should use design-specific skills to be actively involved in the subject as citizens are not "professional" creatives, neither are they members of a social elite invested with institutional roles. They are however capable of sharing their vision with others and are the "experts of the everyday" (Meroni, 2007).

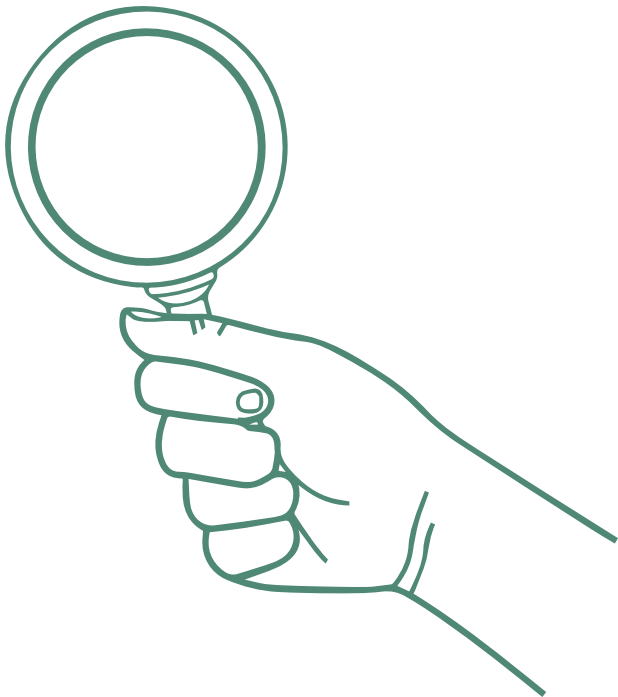
Meroni (2007) says that the citizens occupy a place in society and that they are exposed to all of its characteristics, design can contribute greatly by giving the bottom-up citizens, "everyday designers", the support to materialize and act on their own wishes and ideas. Design should help them set in motion strategies that help them see the possibilities and actively produce their vision. This is even more true in the realm of participation where citizens themselves dare to take action and "design" their environment.

Supporting their actions with design, means helping them act more fluently and efficiently, eliminating disturbing factors and maximizing satisfactory ones. Effective support would enable even those who are not participating already to overcome barriers and decide to take an active part in participatory city making (Meroni, 2007).

Conclusion

Citizen participation can be characterized by a whole landscape of topics and perspectives. The approach of participation is either top-down or bottom-up but right now is mostly top-down and more often reach tokenism then citizens control on Arnstein's ladder. The impact of participation on society can be seen as mostly positive, for both the municipality and its citizens. Organizationally, it becomes clear participation can be used to create a better bond between municipality and citizens and bring decision making closer to the people. Socially, participation helps to increase both social cohesion and social capital. Through participation citizens feel more involvement and have a higher feeling of ownership resulting in the feeling of care towards their local environment.

Because of this positive impact participation is something that is desired by the Dutch government and its municipalities (Slingerland et al., 2020). There are, however, still many challenges and barriers for both civil servants and citizens to engage in participatory city-making. The barriers are diverse and appear in different aspects of participation. Despite many obstacles having the potential to be addressed with design, after this exploration, it became clear that there are too many barriers to tackle in just one thesis. Because of this I decided to select a more narrow scope, namely bottom-up biodiversity initiatives. The next chapter will clarify this scope further and shed light on this context.



Chapter 2

Citizens participation meets biodiversity

This chapter provides a more narrow and contextualized view of the domain citizen participation in relation with biodiversity. First a narrowed scope is proposed. Next an understanding of the context of biodiversity initiatives is provided. By interviewing biodiversity organizations and initiatives and doing literature research, I was able to describe a general initiative timeline, a stakeholder map, personas and the legality of public biodiversity actions. These form the informational base that will support the design sprints in the development phase.

Research questions

The focus of this exploration is to answer the following questions:

- **What are the impacts of biodiversity initiatives on society?**
- **How do the obstacles of citizen participation influence the biodiversity branch of participation?**
- **What does the course of biodiversity initiative look like, and where can pain point be found?**



Narrowed scope

In view of the breadth of challenges my exploratory research revealed, the original goal of the project 'to support citizen to overcome obstacle and join the citizen participation landscape' required more focus. This focus is sought in specifying a form of participation. The analysis of participation projects showed various forms ranging from circular clothing cycles to youth engagement. However, initiatives for biodiversity action stood out as they are common bottom-up initiatives and are in line with my own ideals. The following scope has been proposed:

How can design support citizens in overcoming experienced obstacles in the bottom-up biodiversity initiative domain ?

Why biodiversity?

Rich biodiversity in a city is known to have positive effects on human health, and it has potential benefits for urban citizens at a local scale (Taylor & Hochuli, 2014). First, adding greenery creates more stepping stones for insects and other small animals. These stepping stones are often already present in the form of gardens and parks, but by increasing the public green, the distance between these stepping stones becomes smaller. This makes it easier for animals to travel to the other side of a city and reach new populations (Beumer, 2014). The increase of stepping stones will also help increase the food supply. This will in turn help to increase insect populations.

Secondly, greenery in the neighborhood has positive effects on the health of residents, including less use of medication of children with ADHD, stimulating exercise, recovering from stress and encouraging social contact (Hassink, 2016).

Finally, greenery is proven to help regulate the temperature in a city (Price, 2020). Plants hardly heat up in the sun compared to concrete or tiles, added to this; plants cast shade. Adding more green to a neighborhood will drop the temperature and make city landscapes more livable.

To summarize it: “Biodiversity appears to be a crucial element of urban landscape aimed at ensuring the well-being of humans and non-human living elements and, as such, should be employed to enhance the quality of urban life.” (Carrus et al., 2015)

Why bottom-up?

Currently biodiversity in cities is declining and bottom-up citizen participation could be a great approach to address this. Citizens can be informed, supported and engaged to carry out many small-scale green initiatives to increase biodiversity.

The participation policy is unique per municipality. This assures that designing for top-down participation would also ask for very specific "solution" only addressing a small part of the Netherlands. While designing for bottom-up allows designing for a much bigger audience and can even contribute to the municipalities by acquiring more bottom-up efforts.

Furthermore, on a more personal note, designing for bottom-up, rather than top-down, has a greater chance of reaching the highest level of Arnstein's ladder of participation. Bottom-up initiatives have the ability to empower ordinary people to adapt their environment to their own desires and ideas. It is a way to take power and create a city that is truly based on what the residents want rather than it being opposed on them. In some sense the citizens themselves will have the democratic power to decide what happens to their city. Ideally, successful bottom-up participation has the potential to make a livable city that is closer to the citizens' desires resulting in overall more experience of happiness. This clearly is a desirable goal for me as a designer.

All in all, it seems that successfully supporting bottom-up initiatives can have a positive impact on society, which makes for a viable design goal.

Research methodology

In this chapter, I will provide a more in depth contextual research on citizen participation in relation to biodiversity. This chapter includes a method of literature research to explore grassroot biodiversity initiatives and create a foundation for the second method: Timeline creation with biodiversity organizations. I will also collaborate with a Dutch biodiversity organization to get more hands-on experience of biodiversity initiatives.

Collaboration

In order to have more indepth research and first hand experience I established a collaboration with Guerrilla Gardeners (GG). This is an already existing citizen initiative from Utrecht. The initiative works towards transforming the urban landscape into a more environmentally friendly and biodiverse version of itself.
GG will be able to provide in-house knowledge and experience which allows for a good foundation on which this thesis can be built.
GG will not act as a client as this will provide me the freedom to create a final concept that is beneficial for the initiative landscape as a whole instead of just for GG. In return, GG will gain the knowledge of the addressed obstacle, they will be included in the design with references and they will be able to use the final product for their own initiative.



Figure 8. Logo of Guerrilla Gardeners



Figure 9. Guerrilla Gardeners supporting citizens to plant tree pit gardens (Guerrilla Gardeners, n.d.)

Literature research

Literature research will contribute to create a knowledge foundation of the biodiversity initiative landscape. Conducting desk research will allow me to define the biodiversity participation landscape and map the challenges and obstacles that are encounter by its actors.

Methode

I will conduct Literature review to gain an understanding of the narrowed scope of biodiversity initiatives. Several papers will be collected for the desk research, including classic literature, recent literature, and advisory reports for Guerrilla Gardening. Relevant sources are found through the TU Delft Library, TU Delft repository, Google Scholar and Guerrilla Gardeners library with the following keywords: Grassroot initiative, Guerrilla Gardening Biodiversity in cities, community participation.

Result

The first three papers that are found offer a glimpse into the history and definition of biodiversity initiatives. This is followed by a paper with more specific and realistic examples of initiatives. The realistic projects gave a glimpse into the world of biodiversity action. The stakeholders have been mapped from these example projects.

Guerrilla Gardeners has contributed to the review with in-house knowledge. The in-house knowledge mainly exists of personal experiences and advisory reports, specifically written for GG by Van hall Larenstein university. These advisory reports contain in-depth research of the context of Dutch biodiversity initiatives.

Discussion

The literature research allows me to gather knowledge on the biodiversity participation landscape. Guerrilla Gardeners' library has contributed to explore of experienced obstacles. Through Guerrilla gardeners I am able to map the course of a biodiversity initiative. However, initiatives are often unique. For this reason, the method of timeline creation is adopted as an addition to the research. The timeline will be able to map multiple organizations and form a general timeline that is applicable for all initiatives in Dutch biodiversity participation.



For further elaboration on the interviews and their results see appendix B.

Timeline creation

By creating a timeline I will be able to find a general course of biodiversity initiatives. I will be able to see where on the timeline certain obstacles happen. This will provide more overside over the context.

Methode

Interviews are conducted with three biodiversity organizations. They are mainly focused on creating a timeline with their personal experiences and real life examples. The interviews are semi-structured (see appendix B for interview guide). The questions for the biodiversity initiatives are exploratory and mainly invite the interviewee to describe their story as detailed as possible. Both the positive and negative experience are analyzed and obstacles experienced in the biodiversity landscape were identified.

Sampling

The sampled initiatives, listed below, are selected because all three are currently in a different phase, have a different approach and take place in a different municipality.

The first interviewed initiative is “Stichting is working” by A. Withagen. It is a starting initiative that is very small and local. The action mainly comes from the founder together with one time volunteers from here own social bubble. The initiative has a bad experience when cooperating with the municipality of Berg op Zoom.

The second initiative is “Guerrilla Gardeners” by C. van Gestel. This initiative is middle sized, has turned into a foundation and has now come to a point where they want to recruit others to participate in their initiative. It is a growing initiative with a goal to have impact from local to national level.

The third initiative is “Adopteer een straat” by K. Lepoete. This an extensive initiative that has been going on for eight years. "Adopteer een straat" works together with the the city of Eindhoven and functions as a sub-branch of the municipality. Interested people approach "Adopteer een straat" and receive indirect support from the municipality through the initiative.

Setting

Data is collected during three online interviews. All interviews are conducted with each actor separately.

The interviews take between 1 hour and 1 hour and 30 minutes, depending on the participant’s contribution. The interviews are recorded using zoom recording.

Result

The semi-structured interviews result in an overview off the chronological experiences of the organizations. These insights are analyzed and help to create three timelines corresponding to the initiatives. In turn, these three timelines are analysis and compared with each other. Matching subjects can be found which allows to merge the three timelines into a generalized one. This timeline consists of different phases and shows approximately where, which stakeholder is present. The timeline shows the general progression of an initiative and shows approximately at what moment a certain obstacle is experienced. See appendix B for further details.

Discussion

The organizations interviewed are very diverse. Nevertheless, similarities are found that can form the timeline. It presents a generalistic image of biodiversity participation. However, one may wonder whether three organizations are representative enough to provide a general picture for the entire Dutch biodiversity initiative landscape. Nevertheless, it provides a framework that can support the design sprints in the development phase.

Bottom-up biodiversity initiatives

Citizen initiatives are all unique (H. Koolen, Personal communication, 2022). The three timelines show that this is no different with biodiversity initiatives. Nevertheless, the findings of the timeline and the desk research allow to create a general foundation of biodiversity initiatives.

Definition

Biodiversity initiatives can be characterized by a whole landscape of topics and perspectives. For this reason I will establish a clear definition. Bottom-up biodiversity initiatives often come in the form of guerrilla gardening. Adams et al (2015) describes guerrilla gardeners as volunteers who transform neglected spaces without permission. Mikadze (2015) sees guerrilla gardening as "a tactical means of creating temporary gardens in built-up areas that require little maintenance." Hardman and Larkham (2014) say that guerrilla gardening is an umbrella term for any kind of unauthorized gardening.

In the Netherlands mainly public spaces, and not necessarily private area are being claimed with guerrilla gardening. Permission is rarely requested, but there is often consultation with the municipality. In the Netherlands it seems that most successful guerrilla gardening projects have close communication with the municipality (van Lubenstein & valipurman, 2021).

Examples

Biodiversity initiatives come in all shapes and sizes. It may just be a single citizen wanting to decorate the front of the house by putting planters on the sidewalk and sometimes people living in the same street, working together, to decorate the facade of their own houses. Guerrilla gardening also takes shape on a large scale. For example, every year GG organizes the national tree pit festival where several biodiversity initiatives work together to create as many tree pit gardens in as many municipalities as possible.

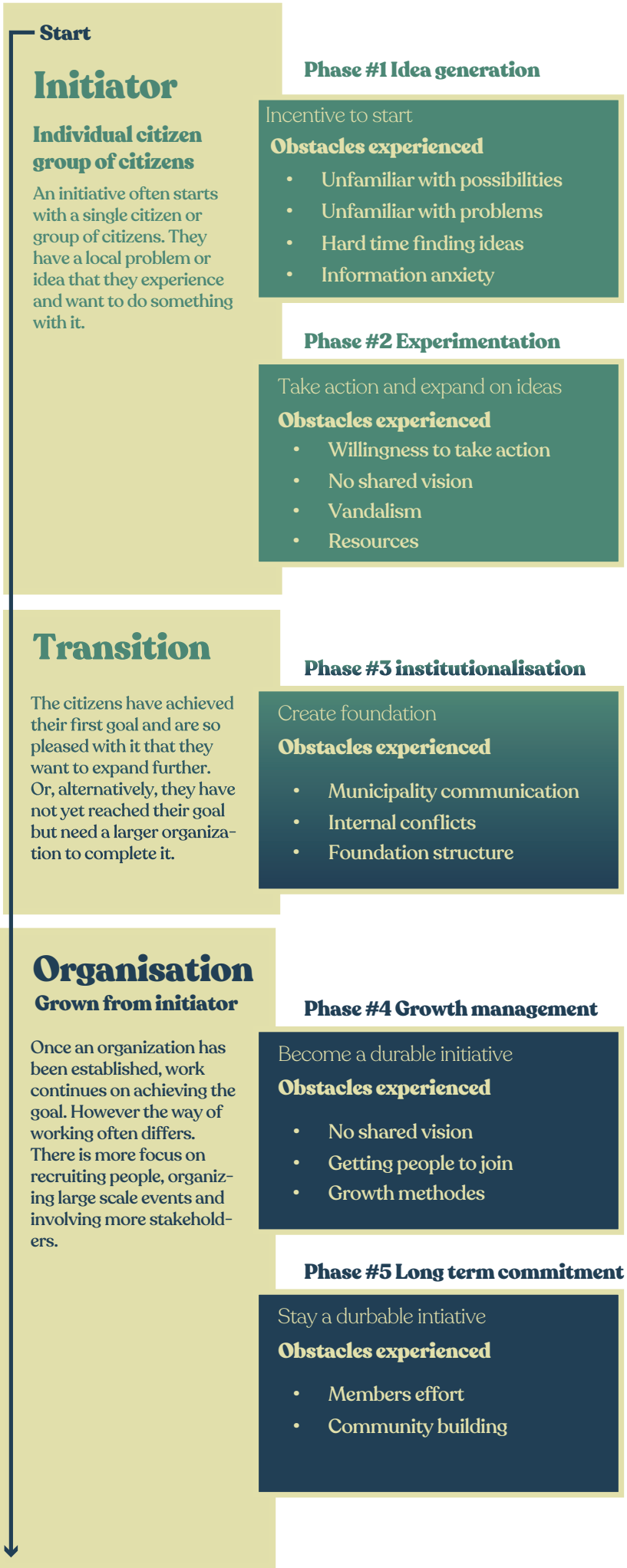


Figure 10. Residents of rotterdam working together to make a facade garden (rotterdams weerwoord, 2019)



Figure 11. Participants of the tree pit festival organized by Guerrilla Gardeners (Guerrilla Gardeners, 2020)

Figure 12. Timeline created with three biodiversity organisations



Timeline

In order to map the experience of a citizen who wants to join the biodiversity initiative landscape, a timeline is created in collaboration with three existing organizations. The different phases that an initiative goes through will be explained in more detail below. It is important to keep in mind that this is a general representation as each initiative is unique and can have a different course.

Phase #1 Idea generation

In the first phase, citizens come in contact with a cause. Something that gives them the idea that they want to do something and form a plan of action.

This beginning phase is unique per person or group but has similar experienced obstacles. The initiators are often unfamiliar with how to start. They do not know what the options are, have trouble coming up with ideas and often cannot find the right information they need.



Figure 13. Yellow vest protest against climate policies. (Colin Kinniburgh, 2019)

Example acquiring a cause

The founder of "Stichting is Working" was present at the yellow vests protests in France. In this movement she found inspiration to take action against civil policies she did not agree with. One of the policies was the nature maintenance in and around her neighborhood. She came up with the idea of claiming pieces of disparate plots of land and use them as gardens for herself and her neighbors.

Phase #2 Experimentation

Experimentation, the second phase, takes shape when the initiator decides to act. The ideas from phase one are turned into tangible changes. The initiator execute plans and see what works and what does not. In this phase, the initiator needs resources, the willingness to take action and a shared vision with the neighborhood. If the latter is not clearly present, there is a risk of vandalism.



Figure 14. Initiators being proud of the created tree pit garden. (Guerrilla Gardeners, 2020)

Example shared vision

When acting out biodiversity action, the founder of Guerrilla Gardeners received support from many residents. However, there were a few who did not agree with her actions. They filed an objection with both her and the municipality. To overcome this obstacle, she sat down with the complaining residents. She explained them what her vision was and what she wants to achieve with her actions. After hearing her vision, the complaining residents understood her plan and were much more accommodating towards the initiative.

Phase #3 Institutionalization

When an initiative is successful, the initiators can either be satisfied with the result or decide to continue and grow their efforts. This is often the moment when an initiative goes beyond its own borders and transforms into an organization. This transformation is often accompanied by internal conflicts and the difficulty of finding the right foundation structure. This is also the phase in which communication with the municipality begins. the communication is often accompanied by negative experiences.



Figure 15. Stichting is Working, working together with Berg op zoom municipality (Withagen, 2019)

Example Institutionalization

During the second phase the founder of "Stichting is working" received more and more requests from resident who wanted to join her biodiversity efforts. After a while there were so many interested citizens that she chose to start a foundation. People could join that foundation and work together. In addition, forming a foundation allowed her to better communicate with the municipality as it showed them the support base her vision has.

Phase #4 Growth management

Some biodiversity initiatives want to progress beyond the third phase and aim to have a large-scale impact. These organizations want to become a growing movement. Here it is a challenge to manage this growth functionally as it often needs a different approach than has been applied thus far. The aim is often to recruit people to join and share the vision with other citizens and the municipality.

Example

"Adopteer een straat" aims to really change Eindhoven in relation with biodiversity and works almost like an side-branch of the municipality. It is the umbrella organization for all citizens interested to join in biodiversity action. Through "Adopteer een straat" citizens can get support towards their own biodiversity efforts.



Figure 16. Adopteer een straat facilitating gardening and cleaning tools for citizens (Lepoeter, 2021)

Phase #5 Long term commitment

This phase focuses on maintaining the applied effort. The organization aims to become a durable initiative and make sure that their efforts do not wither with time. The challenges related to this phase have to do with maintaining the effort of the participants. This is often addressed by creating a community. Community building can be a challenges and gives way to obstacles.

Example

Right now "Adopteer een straat" is conducting an experiment to set up neighborhood ambassadors. These ambassadors manage the efforts of the neighborhood and help increase long-term commitment.



Figure 17. Adopteer een straat member managing plans of creating a greener neighborhood (Lepoeter, 2022)



Figure 18. Adopteer een straat members handing out equipement (Lepoeter, 2022)



Figure 19. The team of Guerrilla gardeners showing a form of institutionalization (guerrilla Gardeners, n.d.)



Figure 20. Collaboration with tv program "Binnenstebuiten" filming an item about guerrilla gardening trying to promote the ideology and let the organization grow. (Guerrilla Gardeners, 2022)

Discovered obstacles

Citizens and organizations

As the timeline already shows, there are various obstacles that are experienced while carrying out a biodiversity initiative. This part of the report will go into further detail and explain what the obstacles entail. For the elaboration of the obstacles, a distinction is made between the obstacles experienced by citizens and obstacles experienced by initiatives that already developed into an organization. This distinction is made because both play a role in the biodiversity initiative landscape but have a different perspective and experience. Important to keep in mind is that the dividing line is rather fluid. Each initiative is unique and is structured differently (de Koning et al., 2018).

Obstacles for citizens

The obstacles discovered in the exploration of the timeline will be supported by a study conducted for Guerrilla Gardeners. In the study by van Lubenstein & Valipuram (2021), 324 Dutch people were asked to fill in a survey containing questions about their experiences with biodiversity initiatives. One section was about their experienced obstacles. This section has been analyzed and resulted in the simplified visualization of the results as can be seen in figure 21. This data will support the insights already collected by the timeline creation.

Time

Time is a typical practical obstacle that many people experience. People have busy schedules that they organize according to their own desires. Maintaining a garden or spreading seeds takes time and van Lubenstein & Valipuram (2021) show that not everyone has that time available.

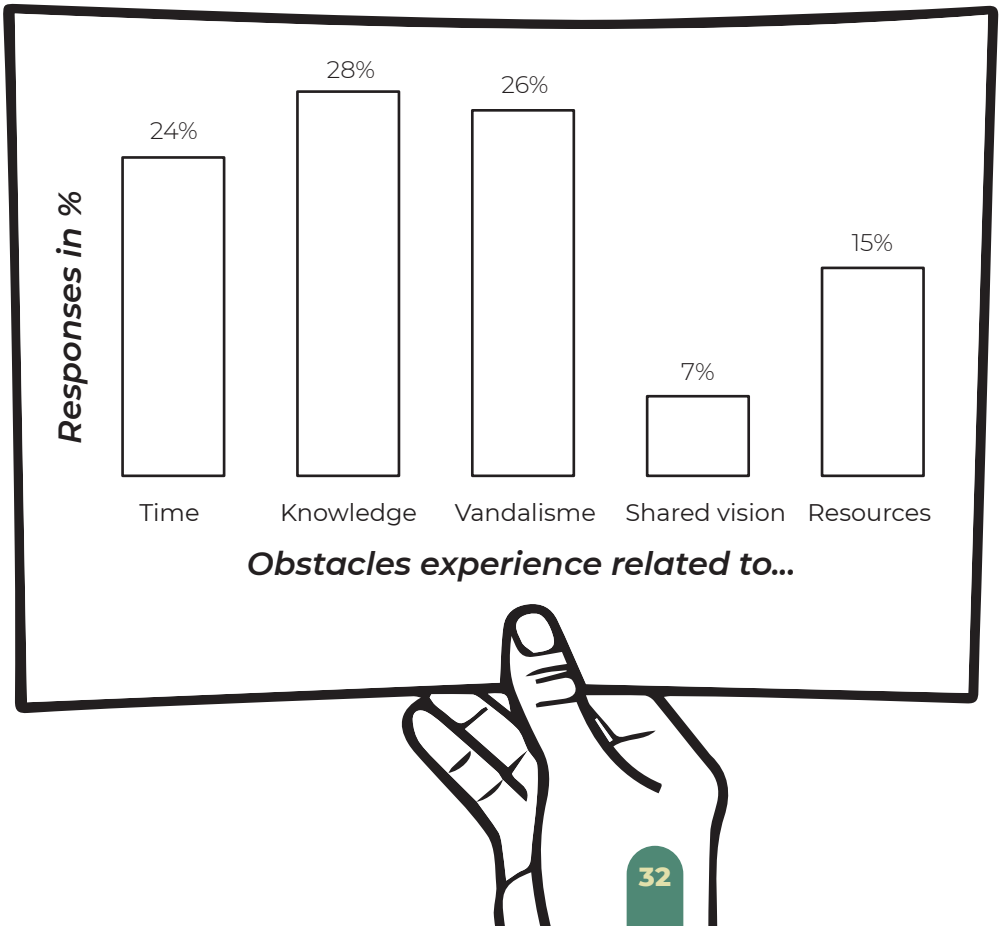


Figure 21. Simplified visualization of survey results about experienced obstaclesin biodiversity initiatives (van Lubenstein & Valipuram (2021)

Knowledge

In the study by van Lubenstein & Valipuram (2021), 28% of the 324 Dutch people surveyed in this study indicated that "not having the necessary information" is the main experienced obstacle for not having participated in or started a biodiversity initiative. They state that citizens who want to get into biodiverse initiatives often feel that the information available is overwhelming. It is far too extensive for a beginner to handle. People often give up as soon as the information is presented. The sheer amount of decluttered information they have to go through before having the right knowledge to take action is to high.

"Not having the necessary information" consists of two themes; not knowing how to get started and legality.

Not knowing how to get started includes the lack of information about which plants to use, how to garden, which plot of land to choose, how to get plants and how to organize a neighborhood day.

Not knowing whether something is legal or not, is assumed to discourages many citizens. They do not know if their actions are illegal and therefore feel an intrinsic barrier, as they do not want to break the rules. Extrinsic barrier are also present as citizens fear fines or other legal consequences.

Vandalism

C. van Gestel from Guerrilla Gardening names vandalism among the top 4 obstacles of their initiative. When thinking of vandalism, people often imagine young people who consciously destroy things. However, it is more nuanced than that. C. van Gestel (2022) explains that there are different forms in which this vandalism takes place.

Municipality

It is the task of the municipality to keep the public space and therefore also the greenery in the public space clean and tidy. They have protocols and fixed rules that they apply. It therefore regularly happens that a claimed garden that doesn't apply to those rules is removed. The plants will be taken away and the plot of land will be converted back to the established standard of the municipality.

When the municipality receives complaints about a claimed piece of public space, they are obligated to listen to it and take action.

Local residents

Guerrilla gardens come in many shapes and sizes. This results in people in the neighborhood not always appreciating a claimed garden. As a result, these local residents practice deliberate vandalism and destroy the garden.

There is also unconscious vandalism. For example, a garden designed for bees has many similarities with, what many see as weeds. A well-intentioned citizen will remove the plants they think are weeds and feel like they did a good deed towards their fellow neighbors (C. van Gestel, Personal communication, 2022).

No shared vision

This last example of unconscious vandalism is a classic example of a mismatch in shared vision. Conflicts can arise when a citizen takes a lot of biodiverse action, but is always resisted by neighbors who do not share the same vision (A. Withagen, Personal communication, 2022).

This mismatch can also occur before action is implemented. A number of the surveyed residents indicated that they were afraid that the neighbors would not appreciate it if they took biodiverse action in the neighborhood. They were afraid that other residents would complain and think badly of them. This is a form of social pressure that is experienced as an extrinsic barrier (van Lubenstein & Valipuram, 2021).

Resources

To start a biodiverse initiative, the initiator needs supplies such as seeds, potting soil and garden tools. Not everyone has these necessities at home or has the opportunity to borrow or buy them. This is experienced as an external barrier to start an initiative (van Lubenstein & Valipuram, 2021).

The lack of resources can also be seen as a gap in knowledge. There are a multitude of ways to acquire plants or equipment for free which most people aren't aware off (C. van Gestel, Personal communication, 2022).

Obstacles for organizations

Once the beginning initiator has overcome the obstacles, experienced by the citizen, they have the opportunity to transform into an organization. The initiator is now entering a new domain which is also familiar with obstacles. The obstacles presented below have been abstracted from the real life experiences of the three interviewed biodiversity organizations and the literature research.

Getting people to join

Many biodiversity organizations rely on manpower to keep the organization standing or even growing. The members of an organization are the ones that implement the vision and, for example, build and maintain the guerrilla gardens, keep the treasury or organize events. C. van Gestel says it is therefore important that new interested citizens are introduced to initiative organizations or visions. This also includes recruiting one time volunteers. An initiative group can be enthusiastic about their own project, this does not mean that volunteers or members will flow in automatically. Finding and maintaining them can be a difficult and challenging task.

Internal conflicts

At some point an initiative, started by an individual or small group, has the desire to become bigger than the initial initiators can handle single handedly. At this point an initiative often develops into an organization or foundation. Another reason to start a foundation is for contact with the municipality. The municipality often does not take an individual initiator seriously and would rather have a group with a shared vision that stand behind their cause as a support base. In the interview K. Lepoeter mentions that forming such a foundation can sometimes cause problems. For example, the individual initiator suddenly has to relinquish power and also listen to other opinions. Conflicting ideas may quickly result into conflicts. There are several methods and techniques that can be used to deal with disagreements. However, beginning initiative organizations often do not have much experience with this resulting in the eventual failure of the initiatives.

Foundation structure

According to De koning, et al (2018), unequal division of roles occurs when there is no clear decision on how the structure of the initiating foundation takes shape, or when the structure that is present is not wanted. If no clear decision about how the group should form is made, often a “ruling elite” emerges. Someone who is already familiar with group management and who takes over the decision making of an initiative.

Municipality communication

Once an initiative has become a foundation or organization, it can join forces or seek support with the municipality. The experienced obstacles in this case are very similar to those of the general citizen participation landscape: Many municipalities have a work structure that is not yet used to the unique and fluid forms of initiatives, There is too little enthusiasm or trust from and towards the municipality or the municipality is not transparent in their communication.

Long term commitment

If the organization is successful, it can sometimes last for years, but that does not mean that members stay on for that same period of time. K. Lepoeter says that the reason for dropping out might be that they have achieved their personal goal within the initiative, an external factor such as demotivating vandalism or time shortage, or simply because they have grown tired of putting effort in their actions. In the interview C. van Gestel mentions that the seasons also play an important role in relation with biodiversity. After all, in the autumn and winter there is little that can be done in the Netherlands for gardening or other biodiverse activities.

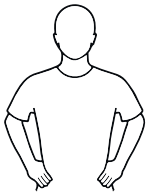
Stakeholders

In order to know which actors are involved in biodiversity initiatives I created a stakeholder map. By mapping the stakeholders from example projects and the stakeholders that got mentioned during the creation of the timeline, I noted down various stakeholders. The variety of stakeholders where then clustered in groups. A distinction is made between direct and indirect involvement.

Direct involvement

Part of the direct involvement are the stakeholders who come into direct contact with a biodiversity initiative. In general, this includes the people who actively participate or are members of an organization. Direct involvement includes the initiator and the active citizen.

Initiator



An initiator can be:
- a individual resident
- a group of residents
- an organization

The initiator is the founder and manager of an initiative. They had an idea, took the first action and turned it into an initiative. The initiator is primarily responsible for an initiative.

Active citizen



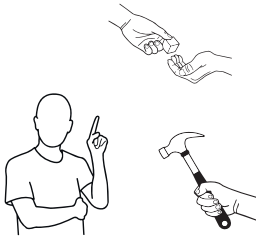
This citizen is often very interested in joining a biodiversity initiative. It often happens that these citizens themselves contact an initiator with the question whether they can participate. These are often the people who will be present at meetings in community centers, neighborhood parties and biodiversity gatherings. They are often already aware of the possibilities of participatory city making and already took small-scale action on their own.

Indirect involvement

Indirect involvement includes stakeholders who are indirectly related to the biodiversity initiative or those who come into direct contact with it but do not necessarily do something with it. Indirect involvement includes civil servants from the municipality, other citizens, professionals, other biodiversity organizations or cultural organizations.

Municipality

Area Coordinator



If an initiative comes into contact with the municipality, an area coordinator is appointed to them. They serve as the contact person for the initiator. Through this person an initiative can apply for grants and facilities. Facilities differ per municipality but they often consist of meeting rooms, equipment, services or even sometimes gifts. These gifts are mostly come in the form of distributed items that support an organized events. For example, they supply plants to the Guerrilla Gardeners tree pit festival.

Citizens

Interested but inactive citizen



This citizen is interested in starting or joining in a biodiversity initiative. However, they experience barriers that they cannot overcome on their own. They often lack the right knowledge or tools to act. This group often needs outside input to take action. Both the initiator and the municipality have a desire to include these citizens more in the participation landscape.

Volunteer



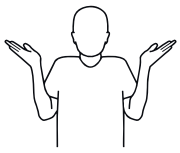
The volunteer citizens are often interested in participating in an initiative but experience practical barriers like time. They however do feel a desire to contribute and mostly do this through short one time action when there is an event organized by an initiative.

Passer-by



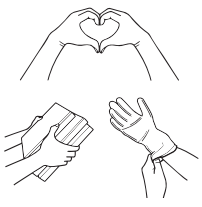
The citizens in the neighborhood or city who experience the initiative action in public spaces. These bypassers enjoy the effort and can be charmed to join the initiative as well. They are the appreciators and users from outside the initiative bubble.

Unconcerned citizen



This citizen has little to no interest in participating in a biodiversity initiative or starting one themselves. Because of this lack of interest, they hardly take any action. Due to the amount of effort that has to be put into enthusing these citizens compared to the benefit, these unreachable groups are often kept to the side. However, it is important to keep this group in the loop because most objections and complaints arise from this group.

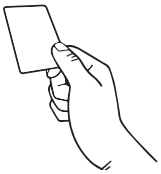
Other stakeholders



The contact with other stakeholders is quite specific per initiative. Each initiative has its own goal and enters into a collaboration based on these goals. An initiative that is mainly concerned with the education of biodiversity will be much eager to collaborate with schools or other educational institutions. An initiative that wants to bring more attention to certain problems in society, for example, will want to collaborate with a cultural organization to raise awareness by hosting an event. If two initiatives have overlapping goals a collaboration can be initiated to combine their forces and take a more large-scale approach.

Professionals

Sponsors



If an initiative has reached a certain size, it will receive more attention and publicity. Potential sponsors of the initiative will be attracted to this kind of exposure. A biodiversity initiative is often related to sustainability. Many companies like to associate themselves with this term.

Garden centres and flower shops



As distributors of plants and flowers, plant businesses have a clear connection with biodiversity initiatives. This does not only include selling plants. For example, a garden center can be contacted for plants that are no longer suitable for sale. These can be distributed across initiatives in a city.

Gardeners



In general, Initiative groups have some in-house knowledge about biodiversity and gardening. However, there can sometimes be special cases or events where a specialist is needed. They can be invited to help on a paid or voluntary basis.

Stakeholder map

This stakeholder map shows clusters of the stakeholders and their mutual relationships. All stakeholders are mapped out in relation to the biodiversity initiative. A distinction is made between stakeholders that have direct involvement and stakeholders that have indirect involvement. Interactions between stakeholders are displayed with arrows.

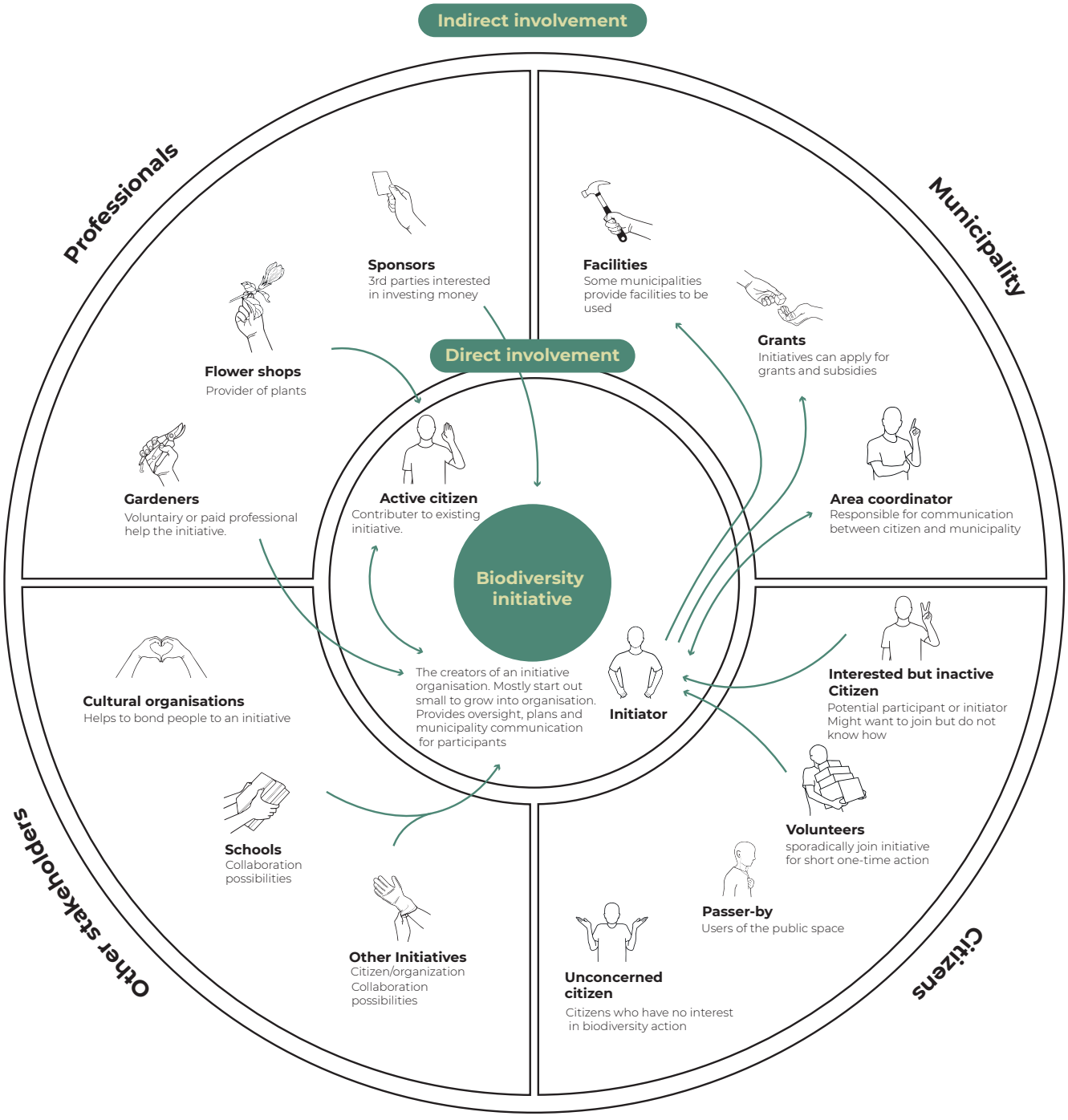


Figure 22. Stakeholder map

Roles

The roles in this section serve as personas of the biodiverse initiative context and show that there are different perspectives and wishes of citizens. The roles help to better understand the functions that citizens can fulfill within biodiversity initiatives. The roles will will help to shed light on design opportunities and how these different citizens can be supported by design. The roles are taken from an advisory report for Guerrilla Gardeners by Botman et al (2022). In this study, Botman et al (2022) analyzed the members of GG and divided them into six roles. These six roles are further explained here.



Figure 23. The advisor explaining the plants in the tree pit garden. (Guerrilla Gardeners, n.d.)

Nature guru / advisor

The advisor has knowledge about nature, plants, gardening and the associated natural processes that occur. With their knowledge about nature, they can contribute to an increase in biodiversity in the neighborhood. Local residents could contact them with questions about gardening, maintenance or plant knowledge. The advisor also knows which plants are suitable for the soil type that occurs in the area and which plants are easy to maintain.

The advisor is very present in the initiative and puts in many hours per week.

The personal motivation is mainly the love for anything related to nature.



Figure 24. Networker bringing people together (Guerrilla Gardeners, n.d.)



Figure 25. Go-getter watering the plants in the neighborhood (Guerrilla Gardeners, n.d.)

Networker

The networker has a clear presence in the neighborhood and knows the neighborhood well. Networkers like to have a chat with local residents and have a good relationship with both people and nature. They take others into account and have strong communication skills. With their social skills, broad network of contacts and their affection for nature, the networker can bring local residents and nature closer together. Because of the familiarity with the neighborhood, they could serve as a person of contact and simultaneously keep others informed about local green projects.

Generally, already involved in the neighborhood and has already put a lot of time into acquiring the network.

The personal motivation is mainly focused on social contact.

Go-getter / promoter

The go-getter has been enthusiastic about the project from the start. They have a clear vision in mind and may even have a plan ready to realize it. The go-getter wants to get started as soon as possible and adopt an entrepreneurial attitude. Where other people might think: ‘We can do that later’ the go-getter thinks: ‘Lets do it right now’. This attitude can ensure that when other neighbors lose enthusiasm, the go-getter motivates them to continue. With some leadership skills they can direct the residents to successfully complete a project.

Spends a lot of time on an initiative and gets other people to do the same.

The personal motivation is mainly aimed at achieving a goal and pursuing a hobby.



Figure 26. Three organizers working out a plan (Guerrilla Gardeners, n.d.)



Figure 27. Treasurer monetizing the biodiversity initative by selling plants. (van Grieken, 2019)

Organizer

The organizer is good at planning and they have a strong organizational capacity. They are very structured and understand the logistical issues involved in a project. With their organizational skills they can plan activities in the neighborhood to bring the residents together. Through the plan, mutual contact in the neighborhood is improved and local residents are more willing to help with neighborhood projects. The organizer knows what is needed in terms of people and resources and how they can be deployed. The organizer can use their planning and insights to bring biodiversity projects to a successful conclusion.

Organizors do not spend too much time on the initiative but are often present at events.

The personal motivation is generally a combination of social contact and love for nature.

Treasurer

The treasurer has interest in financial matters and enjoys being involved with money. they are good at working with figures and know a lot about funds and grants. The treasurer has experience with the municipality and knows how the municipality body functions. The knowledge they have about agencies that can be approached for financing green projects can help with the financial feasibility of a neighborhood project and ensure that a project is cheap and manageable. In addition, the treasurer knows which grants can be requested from the municipality and which funds can be called upon.

The treasurer often comes in when an initiative expands. It is often a side role and therefore not too much time.

The personal motivation is mainly to keep things organized



Figure 28. Volunteer helping out during a big scale event (Guerrilla Gardeners, n.d.)

Volunteer

The volunteer likes it when the neighborhood gets a little more color. They would like to help, but they do not really want to take the initiative themselves. If they are given a task, they perform it well, but they want to know clearly in advance what they have to do. The volunteer actually does not have much time for these kinds of projects, but it seems interesting to them to work on a neighborhood project. They want to cooperate, but they do not want to be too closely involved. With their role in the neighborhood the volunteers show that it isn't necessary to be a 'nature guru' or have a lot of time to contribute to a biodiversity initiative.

The volunteer has little time and therefore often only comes to special events.

The personal motivation is mainly upgrading the neighbordhood.



Figure 29. Volunteer attending a local community garden (Royal tropical institute, 2022)

Legality

According to Hardman et al. (2018), guerrilla gardening is informal rather than illegal, because there are hardly any arrests and convictions. The Legality surrounding guerrilla gardening inhabits a grey zone in Dutch law and is often difficult to establish. According to Carlier (2008) and Dorrestijn (2016), the police usually condone guerrilla gardening, seeing it as something 'naughty' rather than criminal. It is mainly a tolerated policy.

However, there are three dutch laws to take into account when performing biodiversity initiatives. Firstly, the 'flora and fauna law' (Flora en fauna wet, 1998), which states that you may not sow or plant certain plants in nature. Secondly, the 'nature conservation law' (Natuurbeschermingswet, 1998), which states that you may not place unwanted species in natural areas. This is to protect existing nature from invasive plant species. Meaning; plants that actively exterminate other plants to create a better growing environment for themselves. Finally, there is the 'general local regulation' which indicates what is and is not allowed in the city. This is municipality specific and contains all kinds of rules about public space such as conduct rules, permit rules, prohibited object, ect. Important for guerrilla gardening, are the rules regarding placing objects in public spaces and the legal preserved space of the sidewalk passage. For example, in Eindhoven there is a rule that the sidewalk must have at least one meter of free passage (Algemene plaatselijke verordening Eindhoven, 2022).

Conclusion

This chapter presented a more zoomed in overview of participation in relation to biodiversity. A new scope was proposed focusing on bottom-up intiatives and biodiversity.

When starting a biodiversity initiative, the citizen may experience the following obstacles: not having enough time, not having the right knowledge, vandalism, missing resources and no shared vision with other stakeholders. When the citizen overcomes their experienced obstacle they can form a successful initiative and have the opportunity to transform their initiative into an organization. This new domain also provides new challenges. Organizations have a completely different approach and encounter obstacles in the following topics: Getting people to join, internal conflicts, foundation structure, municipality communication and long term commitment.

There is a clear difference between the obstacles experienced by the citizen and by the organization, but since initiatives are unique, the obstacles are rather fluid. The obstacles also corollate with each other. For example, not knowing that there is a possibility to change something about the environment as a citizen correlates with the obstacle of getting people to join an organization.

Again, a broad scale of obstacles is discovered. To address this broad scale a multi-solving approach is considered for the next phase of the project.

Instead of selecting just one obstacle and further addressing it with design, I decided to choose a starting obstacle, apply the method of research through design and let the insights guide the project. This will conclude the discovery phase. In the next chapter, the obstacles will be addressed through a more experimental and hands-on approach. In an iterative way, the context will be further explored and guidelines for the final design will be formed. The iterations will slowly but surely develop into a final design to address multiple obstacles with one concept.



Chapter 3

Iterative Design sprints

This chapter provides an insight in the iterative design sprint phase. First an explanation is given about the applied approach and methods related to this. Then a starting point for the kick-off of the first design sprint will be selected in the form of a logical first obstacle. Subsequently, four design sprints will be presented, each with their own goal, ideation, prototyping and testing. The result of the current design sprint will determine what the new sprint will address. The results of all the design sprints combined will form the foundation for the final design.



Iterative approach

The discovery phase resulted in a range of experienced obstacles. Despite having a clear overview of the obstacles, it is uncertain which obstacles should be addressed. In order to get as close to the problem and experiences of citizens as possible I decided to use the methods of learning by doing and research through design. Learning by doing would allow me to get a more hands-on experience and research through design would help to actively involve stakeholders with the use of prototypes.

In order to be able to properly use these two methods, this phase is structured in short iterative design sprints. The sprints make it possible to focus on a specific part of the extensive biodiversity landscape and actively place myself in it. The sprints adhere to the following structure: a theoretical framework is made to justify design choices, a concept is ideate followed by the creation of experiential prototypes. When the prototype is finished it will be brought to the public space to be confronted with the world. The confrontation generated new insights and ideas that, in turn, form the basis for the next design sprint. The result of every sprint contribute in building a clear foundation for the final design concept.

The first design sprint cannot be based on results of any previous sprint and therefore has to have a clear starting point. Obstacles that mainly occur at the beginning of the timeline for both the citizens and the organizations have been selected. Design sprint #1 will further elaborate this choice.

Figure 30 is an attempt to summarize the iteration phases. It shows which obstacles were addressed. Important to keep in mind is that this image was created after the iterative design phase. During this phase it was unclear what the focus of the follow-up sprints would be.

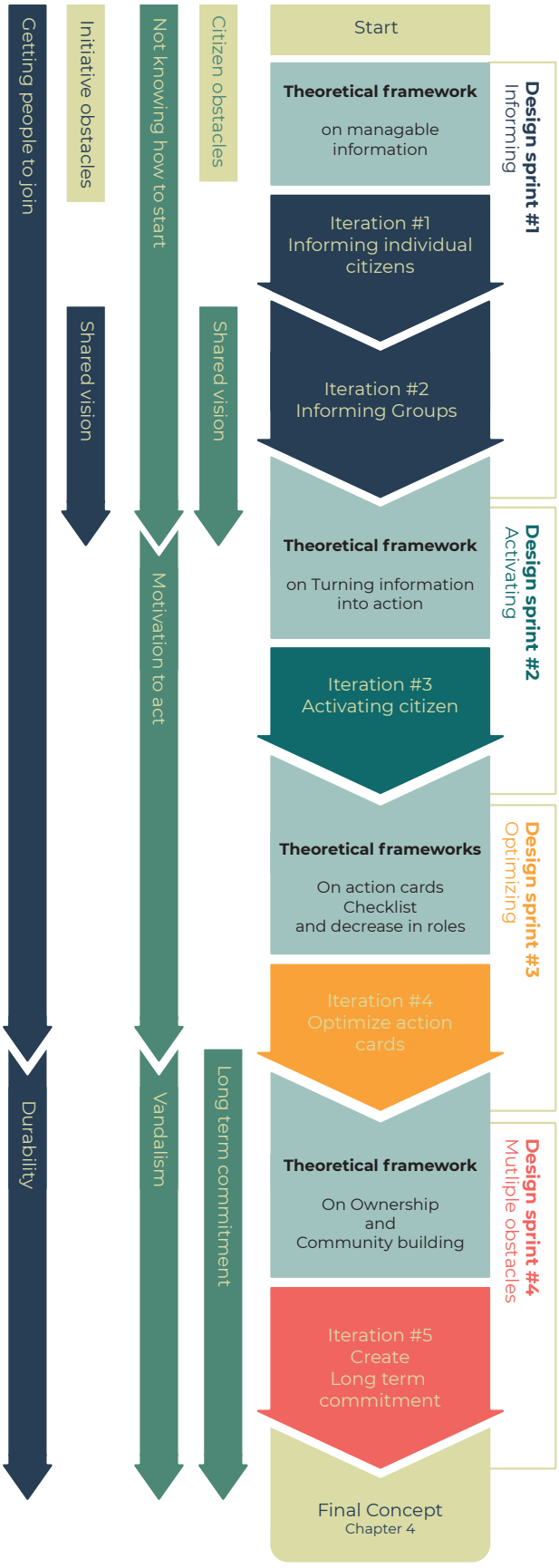


Figure 30. Structural overview of the iterative phase

Design sprint 1: Informing citizens

Introducing citizens to participation information

I chose the following obstacle as a starting point for design sprints: The knowledge gap of citizens, including not knowing how to start and being unaware of the possibilities, and the challenge of organizations to get members to join the organization. Both of these obstacles seem to be the cause of the following problem statement.

Problem statement

Most citizens are not used to approaching municipalities with their ideas, questions or complaints. Even when the municipality wants them to. They often do not respond to any calls from the municipality to participate (H. Koolen, personal communication, 2022). As a result, the power of participation falls in the hand of a select group of citizens who have the opportunity to participate. A large part of the population is therefore underrepresented in the participation landscape. It appears that there are many interested people who would like to participate, but do not know how or are unaware of the possibilities (Slingerland, 2022). The cause of this problem seems to be the experience of a knowledge gap by citizens which they are unable to overcome without adequate introduction to the necessary information.

Design challenge

As people are not used to actively contribute to their local environment, there is an opportunity for the organizations to make citizens aware of the influence they can have. Through carfull transmission of information, citizens can slowly start to engage in local biodiversity activities or initiatives. The design challenge in this design sprint is therefore to make citizens aware of possibilities by successfully transferring information to them.

Sprint goal

The goal of the design sprint is to provide biodiversity organizations with the tools to actively inform interested but inactive citizens about possibilities of initiative action.

Research questions

Questions to be answered through the research through design iteration:
How to get in contact with the interested citizens?
How can citizens be informed about the possibilities?
Will personalization make the information more manageable?

Approach

In order to arrive at a testable prototype, a theoretical framework will be established about requirements to effectively inform the citizens. This framework will help to create a foundation on which the design choices can be based. Subsequently, there will be two prototypes. The insights that emerge through the iterations will contribute to finding the topic of the next design sprint and will form the next steps in this research through design process.

Theoretical framework

Make information manageable

How can citizens be informed about the possibilities?

According to the founder of Guerrilla Gardeners, citizens can find a lot of information about biodiversity and guerrilla gardening on the internet. Whenever someone is interested in biodiversity action they can go on the internet and try to find the information that they need. Once on the internet, however, there is an overload of unstructured information. The information citizens need is often detailed and situation specific. For example, a Dutch beginner may come across a website that explains how to make a facade garden in America. However, the laws, climate and flora and fauna of the Netherlands are completely different from those of the united states.

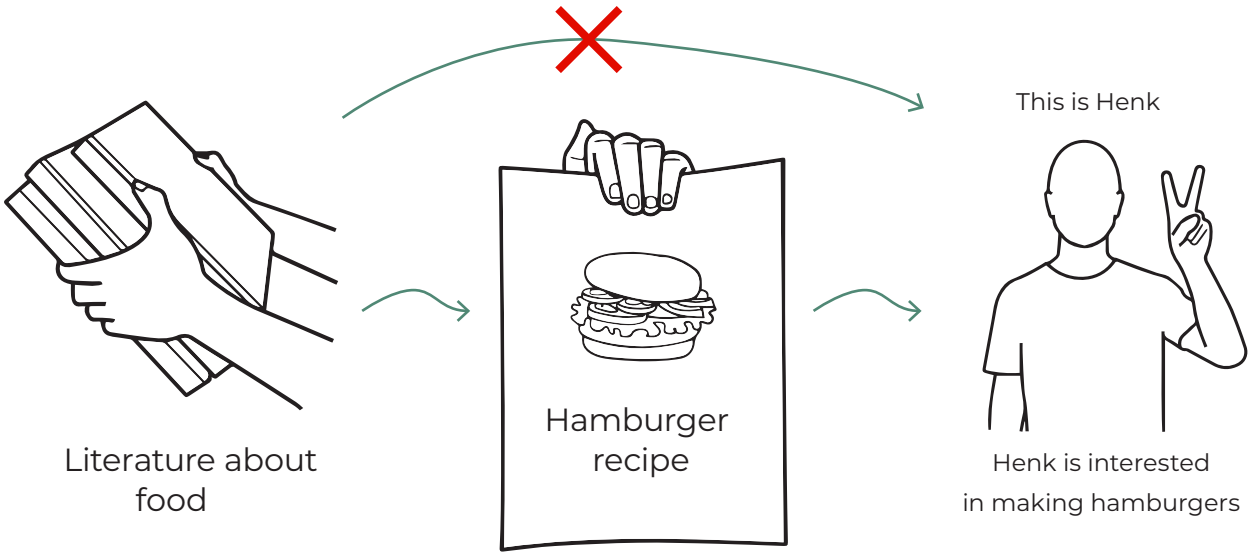
According to Brennan (2011), An overload of information often leads to inefficiency and stress. “information anxiety,” is a state of stress caused by an overwhelming flood of data. The stress related to not being able to process information as fast as it arrives can feel depleting and demoralizing. Information stress can also be caused by concern about not having all of the relevant information needed for a task or project.

In order for citizens to be able to process the information necessary to fulfill their role, there is a need for them to be able to manage the data they receive.

How to be implemented

Personalization

The approach to make the information more manageable is to reduce the information the user receives and only give the information they need or want. Existing techniques are for example: flowcharts that direct users to the right information, information packages, video tutorials, etc. However, personalization seems to be the most viable in this case. Personalization ensures that people only get the information they are personally interested in. This does not only provide a more narrow scope of information, but also ensures that people are more motivated by working with something that interests them. Furthermore, a more personal link with information and opportunities is more likely to shape intention to act. (Bendor, 2018)



Iteration #1
Informing unaware citizens

Introduction

In accordance with the theoretical framework, this first iteration will try to personalize information towards the citizens. In order to do this, the roles present in the biodiversity initiative landscape are linked to personal identifiers. It is assumed that the user can select a role based on these identifiers and receive information that is specific to that role.

The prototype of this iteration will be placed in the public space. Citizens will actively be invited to interact with the prototype while they will be observed and asked questions to gain insights. The insights will help answer the research questions.

Prototype #1 The biodiversity wheel

Details

The prototype consists of a circle with different layers that can rotate around their own axis (see figure 31). Each layer consists of a circle with options and a disk that can rotate on its own axis and thus revealing the options of the circle below as the user interacts. The user uses the disks on different layers to explore the different options and knowledge and finds out what interests them. To reinforce this sense of exploration, the options are not immediately visible and the user must interact with the prototype to make them visible. In a previous project I found that this sense of mystery will contribute to increase the sense of exploration, focus, attraction and fun.

When the user has made a choice for all layers, the arrows on the disks point to a possible role. When the arrows all point to one role there is a clear role designation. However, it is also possible that all arrows point to a different role. This does not matter as the main aim is to let the user explore the roles, get to know the options and choice the role that they think fits them best.

First layer

The first circle physically has the least space to include options. Therefore, the constraints will occupy this layer as they are the lowest in number. The unaware citizens are most likely to be the least familiar with these. After all, they have not yet taken any action and have not yet run into any obstacles or constraints. the minimal selection of four constraints that are plausible to be experienced consist of: money, time, physical limitation and not knowing how to start.

second layer

The second layer consists of personal motivation. These personal motivations have been selected according to research done by Cavalli, et al (2020). Their survey among Dutch citizens showed the following motivations belonging to the top ten most commonly listed: the goal to increase the beauty of the neighborhood, to get into social contact and to be part of a community, to do something for the birds and the bees, to exercise a new hobby and to tackle climate issues.

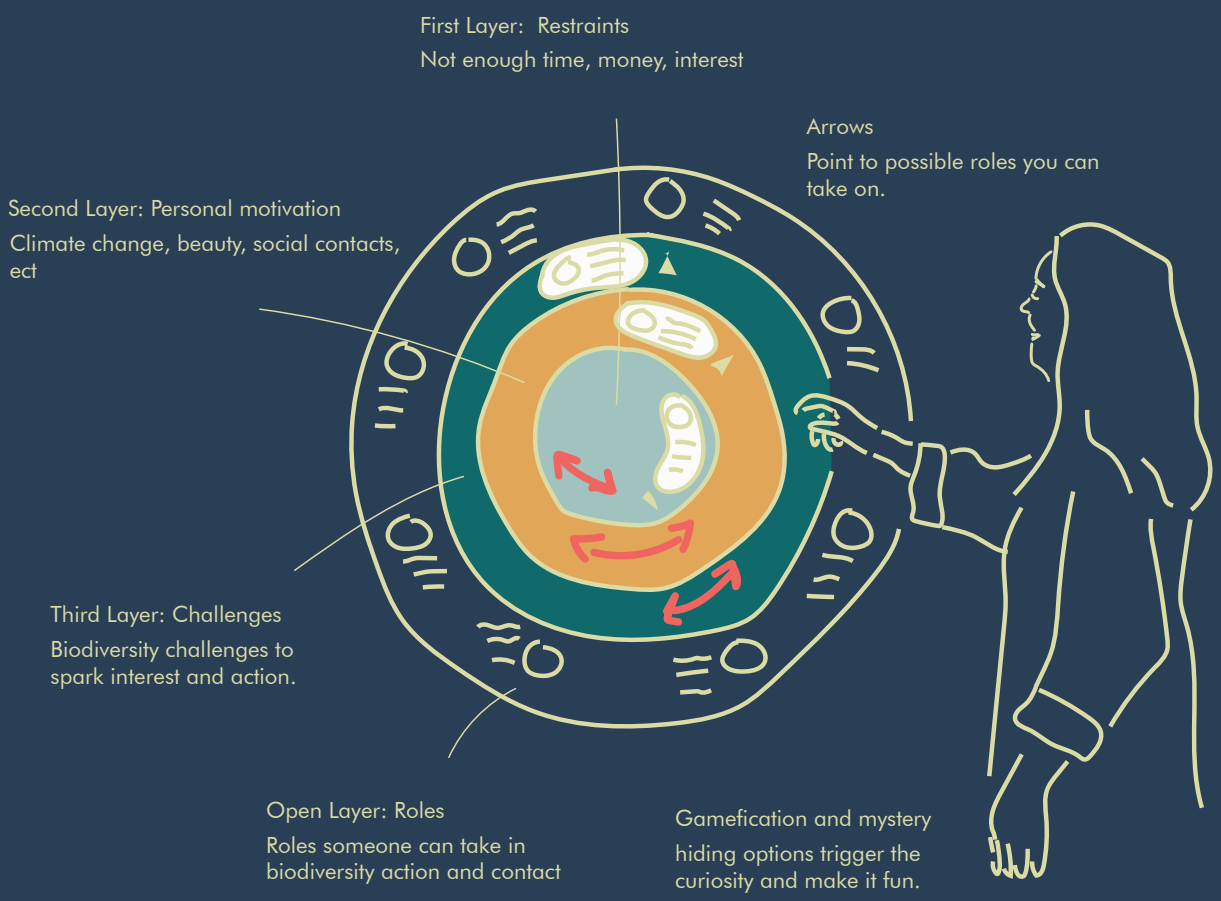


Figure 31. Sketch of the biodiversity wheel concept

Third layer

The third layer displays challenges and has been added as an experiment. The question is whether small and simple challenges can inspire people. The user can find out what they might be interested in based on these challenges. An example always appeals more to the imagination than an abstract concept. The challenges arise from a brainstorming sessions with Guerrilla Gardeners. In this prototype the following challenges have been added: Tree pit garden, facade garden, sidewalk chalk campaigning, give a workshop, plant in a can, seed spreading, seed bombing and pothole flowers.

Roles layer

The last layer contains the roles. Each role is always visible from the start so that the user can clearly see what the possibilities are. Each role consists of three parts. The first part explains the tasks and activities that are part of the role. The second part is what you might learn by fulfilling this role. The last part provides an introduction to someone who already fulfills this role in the neighborhood or in another initiative. A telephone number is included so that the user can contact them if they wish.

Test procedure

In order to get valuable insights I tested the prototype with interested but inactive citizens. I created a prototype of the concept and placed it in front of a supermarkt. Here, I asked residents from the neighborhood to participate in a test.

For further elaboration on the test procedure and the results of the prototype test see appendix C.

Introduction

First I gave a brief explanation about the thesis followed by the question whether the citizens want to participate in a small experiment. Then I asked them to talk about if and how they are involved with biodiversity in their neighborhood or environment.

Interact

After the introduction I invited the participants to interact with the prototype. In the meantime, I observed them and note down insights about the interaction. During the interaction I asked questions to help them speak their mind.

Interview

After the interaction, when they have found a role, I started an open conversation with prepared questions about their motivation, inspiration and what they did or did not find interesting about their experience.

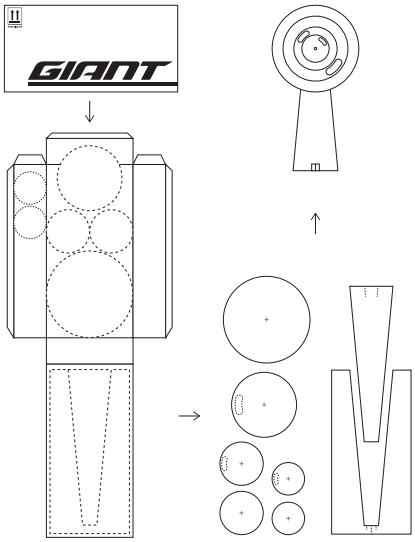


Figure 34. Building manual for the prototype made out of bicycle packaging



Figure 32. Participant interacting with the wheel prototype



Figure 33. Participant interacting with the wheel prototype

Result

Five participants contributed to the test. Insights were found not only about the concept and design sprint goal but also about the context. Since this was the first contact with everyday citizens, a lot of findings are about the citizens themselves. To keep a clear structure the insights have been subdivided into a people section and a design section. See appendix C for further elaboration on the results.

Insights people

Constrains

Value of time
The assumption was that not having enough time would have been an issue. However it seems that the concern is actually about the value of time.

"When I have free time, which is not so often, I really want to spend it on myself. Just some nice me time.".

Money as constraint
Money constraints was only addressed once. The participant indicated that she was not able to spend a lot, but that if it was on a budget, she would have no problem with it.

"If it's well spent and I get a nicer neighborhood in return, it's fine.."

Not knowing how to start
As expected, not knowing how to start is the most common constraint. This constraint is assumed to be one of the most important one why the target group does not initiate action. Many participants were surprised by the amount of options available.

Conformation introspection
The participants knew surprisingly well what they wanted and did not hesitate about the choices they made while spinning the layers. No one had any trouble finding the right constraints, motivation and challenge and everyone was pleased with the choice they ultimately made.
"Wow, this wheel could also be used during therapy. For people who are constantly having doubts."

Personal motivation

Unique
All participants seemed to have a completely unique motivation to participate. There was no pattern to be found in the choices.

Personal growth
One of the motivations I had not thought of before was that learning can also be a personal goal. When examining the roles, the participants made comments about the skills they wanted to learn and considered it as a reason to choose a particular role.

Relatedness

Contact

In the test, the citizens were asked if they would like the cellphone number of someone who is already acting in the same role. Most people did not really want this. Only three participants wanted to call for more information, but preferred to figure the rest out for themselves. There clearly appears to be a barrier with coming into contact with a random stranger. In the end, however, it turned out that these three people did not bother to call this number either. Some of the participants indicated that they would rather just get started on their own. The vast majority, however, said that they would prefer to build a relationship with someone they already knew or use a biodiversity project to get in touch with street or neighborhood residents. So there is a desire for contact and relatedness, but it is aimed at people with whom there is already some link.

"But I can also just ask people in my street? I would like to have more contact with them anyway.."

Even distribution

At first I expected that few people would seek out the interaction with the biodiversity wheel. However, at least 2/3 of the respondents were happy to participate. And half of them were already quite actively involved in making the neighborhood more green or were completely satisfied with how green the neighborhood was. The other half showed a lot of interest and clearly wanted to know more.

Shame

During testing there was a clear notion that people felt the need to express how "green" they are. When asked what they were already doing for biodiversity, some people became quite uncomfortable. They gave extensive explanations about their efforts towards nature. Even the most minor detail entered the conversation. If their actions were minimal, it seemed that the people felt shame when talking about it. They felt the need to come up with reasons why they did not do that much. From this and my own experience I concluded that there is a kind of obligation in Dutch society that you have to be good for the environment. There is a certain standard of how people should take action, and anyone who does not is looked down upon.

Insights design

informed

During the interaction, some participants indicated that they would like to further investigate certain information at home. This showes that the users are not only informed but also inspired. They also took photos of certain challenges and even took notes to look it up later.

Imagination

The constraints and personal motivation were quite abstract thinking levels. The challenges provided a good counterbalance and appealed to the imagination. It seemed to help participants to make a good choice.

Focus

During interaction, the participants were focused on the interaction and kept turning the different circles to discover new things. It regularly happened that when a question was asked they would not even look up and make eye contact. Instead they gave a slightly absent answer and continued the interaction.

Visual trigger

The prototype looked quite strange and unusual. because of this many people came up to me to ask what it is. The visual appeal triggered people, whether this is the size, the material, the shape or the DIY character.

Personal communication

Despite the fact that the visuals triggered people to come and see, no one used the design on their own. People needed a clear explanation of how it works before interacting. When the prototype was left on its own for a while, people regarded it but did not seek to interact with it. A personal approach or clear sign is necessary to make this particular prototype work.

Information handeling

The information that is transferred to the user is minimal. With this information alone, someone cannot just start with biodiversity action without first having to do some more research. This is still experienced as a barrier.

Discussion

This iteration provides a lot of valuable insight, not just about the iterated concept but also about the citizens and the context. It confirms some obstacles that were found in the context research. For example, many people said that not knowing how to start is indeed a constraint they feel. Time and money is not necessarily about quantity but more about the value that people are willing to put into biodiversity action.

The personal motivation to participate is unique to everyone and is therefore something that should clearly be kept in mind when designing for it. Despite the fact that literature research has shown that people often take initiatives with the purpose of social contact (De Koning et al, 2018), this test, shows that people prefer to avoid contact when it comes to strangers. An explanation for this could be that they want to avoid obligations, avoid social pressures or experience social anxiety.

People knew surprisingly well what they wanted and seemed to know what drives them personally.

As for the design, it seemed to work well for getting in contact with people in public. The unusual appearance seemed to attract people and citizens regularly took the initiative to get in contact out of curiosity. However, there was still a threshold to actually interact with the prototype.

Although the information about the roles is superficial and basic. People seemed inspired and wanted to learn more about some of the topics they discovered.

Conclusion

The biodiversity wheel prototype shows the potential of making a personal profile for the extensive information. It allows people to get familiar with the options of biodiversity action while simultaneously finding out what role or information fits them personally. However, as a tool for an organization it might be to single purposed. The information transfer is focused on individuals while biodiversity organizations mostly come in contact with people in group situations. It is therefore necessary to follow this iteration up with one that focusses on group situations. Iteration #2 will try to address this issue and focus on the manageability of information in group contexts.



Figure 35. Biodiversitywheel surrounded by plants

See appendix D for an overview of Quartet cards

Iteration #2
Informing unaware groups

According to C. van Gestel from Guerrilla Gardeners, Initiatives often spread their information and vision through community centers or neighborhood parties. This is done through presentations, conversations or workshops. These activities are often done in a group setting. With the spreading of manageable information in mind, the easy transfer of information to groups is an interesting iteration opportunity. This iteration is concerned with actively informing the users. During the ideation of this iteration, the idea arised to activate people with the information they receive.

Therefore, in addition to testing the transfer of information, the user will also be tested on whether or not they are inspired to take action.

Approach

A prototype focussing on informing multiple people at once is used in a group setting. Citizens will actively be invited to interact with the prototype while I observe them and ask questions to gain insights. The focus lay on the following aspects: gained knowledge, feeling of inspiration and overall experience

Prototype #2 Quartet game

Details

The Quartet game is like the old familiar game. However, it is made in the theme of guerrilla gardening and added information on the cards subject is provided. It is assumed that while playing, users get acquainted with the different aspects of guerrilla gardening.

The prototype is an adaptation of an existing recognizable game. This form of information transfer can be combined with many other simple but well-known games. Think of Memory, Bingo or even Twister. However, Quartet was chosen because it is assumed to have a better chance of starting a conversation because there is already a clear interaction between the players.



Figure 36. Part of Quartet game held in hand.



Figure 37. Quartet game

Titel of subject
Indicates what the card is about

Category
Clarifies what the theme of the card is and which other cards belong to it

Example image
Pictures speak to the imagination

Explanation
Gives a short introduction on the subject



Figure 38. Visualization of one quartet card

Categories

Like any Quartet game, there are multiple categories. Eight have been selected, which makes it possible to play the game with four people. The categories are as follows:

1. Location
Facade garden
Tree pit
Planter
Road strip

2. Roles
Advisor
Organizer
Networker
Volunteer

3. Plants
Edible
Shade
Bee friendly
Bad soil

4. Action
Canned plant
Seedbomb
Item planter
Botanical chalk

5. Tip/trick
Budget
Tile breaking
Ask around
Cheap

6. Impact
Stepping stone
Temperature
Food
Health

7. Tools
Signs
Water can
Home grower
Shovel

2. Contact
Local newspaper
community centre
Media
Flyer

Test procedure

In order to get valuable insights I tested the prototype with the interested but inactive citizens. I created the prototype and presented it to a group with more then three people. I invited them to play the game while I observed them. See appendix D for further elaboration

For further elaboration on the test procedure and the results of the prototype test see appendix D.

Introduction

First I gave a brief explanation about the thesis followed by the question whether the participant want to participate in a small gaming session.

Interact

I unpacked the cards, shuffle them and deal them out to my participants. I let them play the game while I tried to intervene as little as possible. While they play I observed and write down any interesting observation.

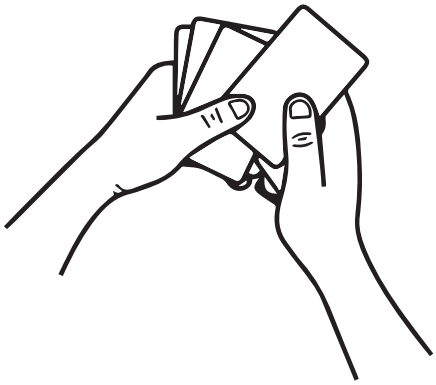


Figure 41. Prototype comes in the form of cards

Survey

After playing the game I asked the participants to fill in an online survey. I sent them the link through whatsapp and wait for them to fill it in. If they have any questions I am their to answer them. The survey consists of three main themes.

Prior knowledge: The participants have to rate themselves in guerrilla gardening knowledge on a linear scale.

Knowledge gain: Questions are asked about if they acquired a more clear image of guerrilla gardening and learned something new.

Inspiration and action: The participants are asked about being inspired and being led to action.



Figure 39. Quartet game played with friends.



Figure 40. Interns of GG playing the quartet game

Result

Twelve participants contributed to the results. While playing the game, I sat next to the participants and watched to observe and take notes. In the end, many notes turned out to be similar and only five observation insights cards were created. After all test were completed I analyzed the survey results. This took form in the four survey insight cards below.

Insights

Survey

Prior knowledge
The vast majority of the participants indicate that they do not have a lot of prior knowledge on guerrilla gardening. More than half indicated the absolute minimum. The rest specified just one step higher and only one indicates that they know a lot about guerrilla gardening.

Clear image
The vast majority of participants indicated that they had a clearer image of what guerrilla gardening entails after playing the game.

Gained knowledge
The vast majority of players indicated that they had learned something new. This is not surprising given the generally low prior knowledge among the participants.

Action
The majority of the participants indicated that they were not inspired to take green action themselves after playing the game. Despite some saying that they were, no one has undertaken any action since the test.

Observation

Happy to play
When asked if people wanted to participate, most were quite enthusiastic. They tended to like playing a game.

"Ooh nice, Games are always welcome."

Pause
In one game the play was paused and the focus on the game got lost. The participants started talking about the cards instead of playing.

Sparked conversation
Sporadically, conversations arose between the players when exchanging the cards. However, this happened less than initially expected.

After game conversation
It happened with different groups that the cards were passed around after the game. The players on the one hand wanted to know what was on the other cards and on the other hand were curious with what I made.

Postive addition
The information was not an annoyance and was experienced as an positive addition of the game.

"It's nice to read the information while you wait for your neighborhood. Especially if you play with several people."

Discussion

In the test, most of the participants indicate to have a low prior knowledge of guerrilla gardening. This is comparable to a situation in which a biodiversity organization appeals to people in the neighborhood. Despite the fact that the prior knowledge was low, most participants indicate that they have learned something new. This means that the information is at an appropriate level. Despite the fact that the information is fairly basic, it still offers room to learn. Although the cards convey information, it does not inspire participants to take action. Apart from the three preconceived themes of prior knowledge, gained knowledge and inspiration, the game seems to offer something on a social level. People had fun playing the game and conversations about biodiversity were initiated. The subjects on the cards where discussed or stories related to the actions were told. This can be of added value for biodiversity organizations. In this way, people are not only informed, but they also come into contact with each other. They can increase their knowledge and perhaps motivation through conversation among each other.

Conclusion

This iteration shows that information transfer can happen in a group situation. It can be concluded the game provides information in a group context as well as promoting social contact. The participants become familiar with the possibilities in a playful way. However, it is clear from the survey that people do not necessarily turn this information into action.



Figure 42. Interaction between participants.

Conclusion: design sprint 1.

This design sprint showed that citizens can be approached and informed about possibilities. Two tools were iterated which provided insights to answer the research question. The biodiversity wheel demonstrated that citizens can be approached on the street and be informed about the possibilities of biodiversity action. It shows that people are able to personalize information and do not get information overload during that process. The Quartet game shows that people can be supported in acquiring information in a group situation. Although personalization is not applied it still seems that it makes the information manageable.

Despite the fact that people can be informed about possibilities and the role they can take on in biodiversity initiatives, it is not yet clear whether the people are actually activated. They are still faced with the barrier of figuring out exactly what their chosen role entails. A follow-up on the biodiversity wheel is necessary. Something that can nudge people after being in contact with the biodiversity wheel or quartet game. Something that can motivate to process the information they have been given in their own personal environment. This will be the aim of the next design sprint.

Design sprint 2: Activating citizens

Translating information to action

According to Roy Bendor (2018), "It is simply the case that information in and of itself is an insufficient condition for action." This means that the mere provision of information will be insufficient to cause action with the interested but unactive citizen. This design sprint aims to find a way to motivate the citizens to use the information they have been given and translate it into action.

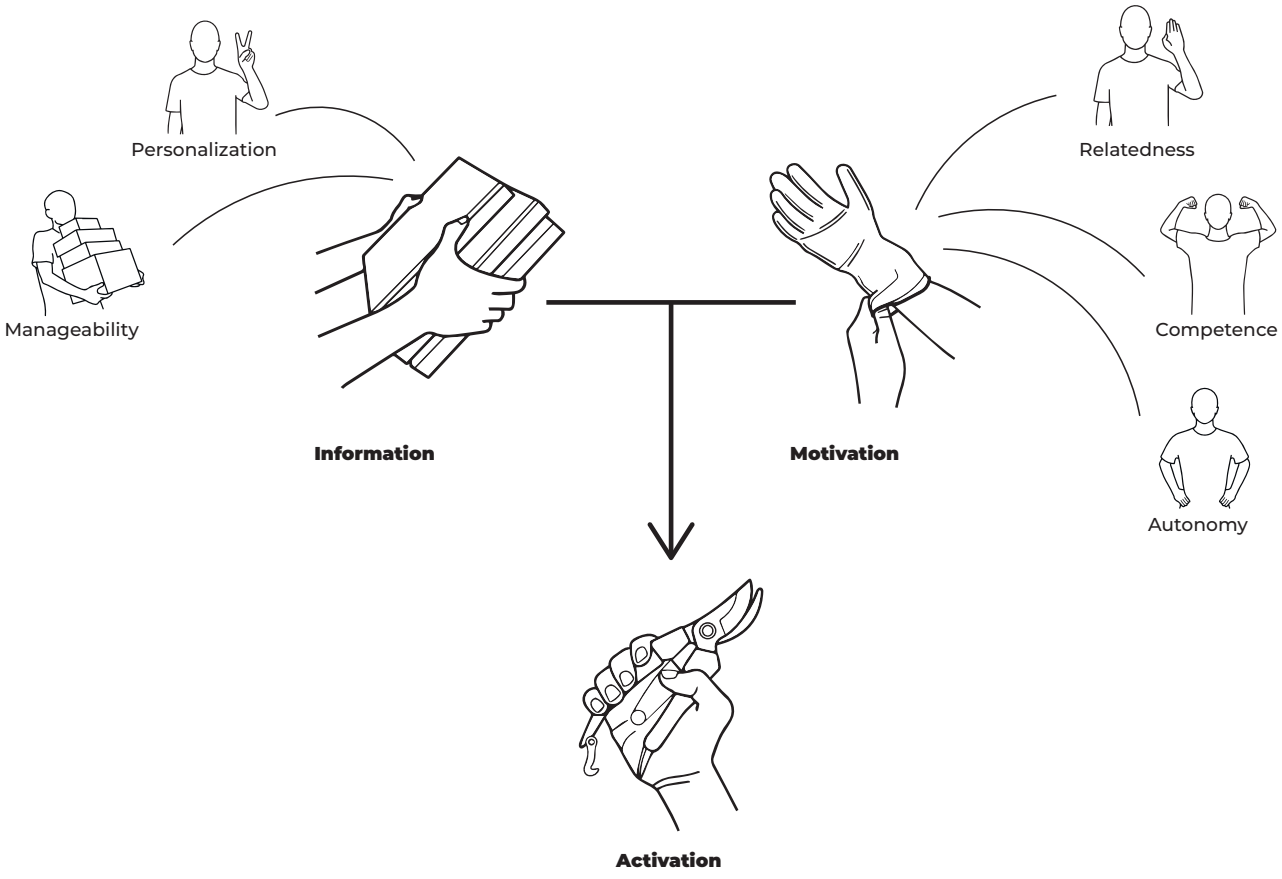


Figure 43.Information combined with motivation is assumpted to turn into action

Problem statement

The previous two iterations provide the opportunity to introduce citizens to the possibilities of biodiversity action. Despite the fact that the citizens have become more aware, there is still a clear follow-up problem. The fact that citizens have access to information does not necessarily mean that they will immediately do something with it. The assumption is that the information is read by the citizens and then quickly forgotten. Even if someone does want to dive deeper into their role and gather more information, it is assumed that they will quickly become demotivated again due to the information overload.

Design challenge

To support citizens in using the provided information this design sprint's challenge will be to create a prototype that can follow-up on the biodiversity wheel. Something that can nudge people after being in contact with the biodiversity wheel and can motivate people to process the information they have been given in their own personal environment.

Sprint goal

The goal of the design sprint is to support citizens in using the information that they aquired and support them to translate it into action.

Research questions

Questions to be answered in this design sprint.

How can citizens be motivated to take action?

Does providing information leaflets spark action?

Approach

A theoretical framework will be established about the feeling of motivation and how to implement it into a concept. This framework will help to create a foundation on which the design choices for the iteration can be based. This will be followed the creation of a prototype an iterations. The insights this prototype produces will contribute to finding the topic of the next design sprint and will form the next steps in this research through design process.

Theoretical framework

Provide a feeling of motivation

How to motivate citizens to take action?

Ryan and Deci (2000) say that motivation depends on a huge amount of factors. People can be proactive and engaged or passive and alienated. One can get a lot of satisfaction from sports and the other just discomfort. It has to do with nature but at the same time with nurture. The social circles someone grew up in can have an impact on the values someone has, which in turn is closely linked to motivation. A previously experienced event or trauma, the mood someone is in or the social context someone finds themselves in can have an impact on current decisions and motivations.

All in all, it can be said that motivation is unique per person. This makes it very difficult to design for personal motivation. To overcome this, an abstract psychological framework should be used. There are numerous of these within the psychology landscape, for example: Expectancy-value theory, Social-cognitive theory or the more famous one: Maslov's pyramid. For this obstacle, however, the framework of the so called self-determination theory (SDT) will be applied.

"SDT is an approach to human motivation and personality that uses traditional empirical methods while employing an organismic metatheory that highlights the importance of humans' evolved inner resources for personality development and behavioural self-regulation" (Ryan, Kuhl, & Deci, 1997).

To put it more simply: the theory suggests that people are motivated to grow and change by three innate and universal psychological needs. It proposes that people are able to become self-determinedly motivated when their needs for autonomy, competence and relatedness are fulfilled (see figure 44). These three ingredients make for a great framework as they can clearly be designed for, unlike for example the pyramid of Maslow.

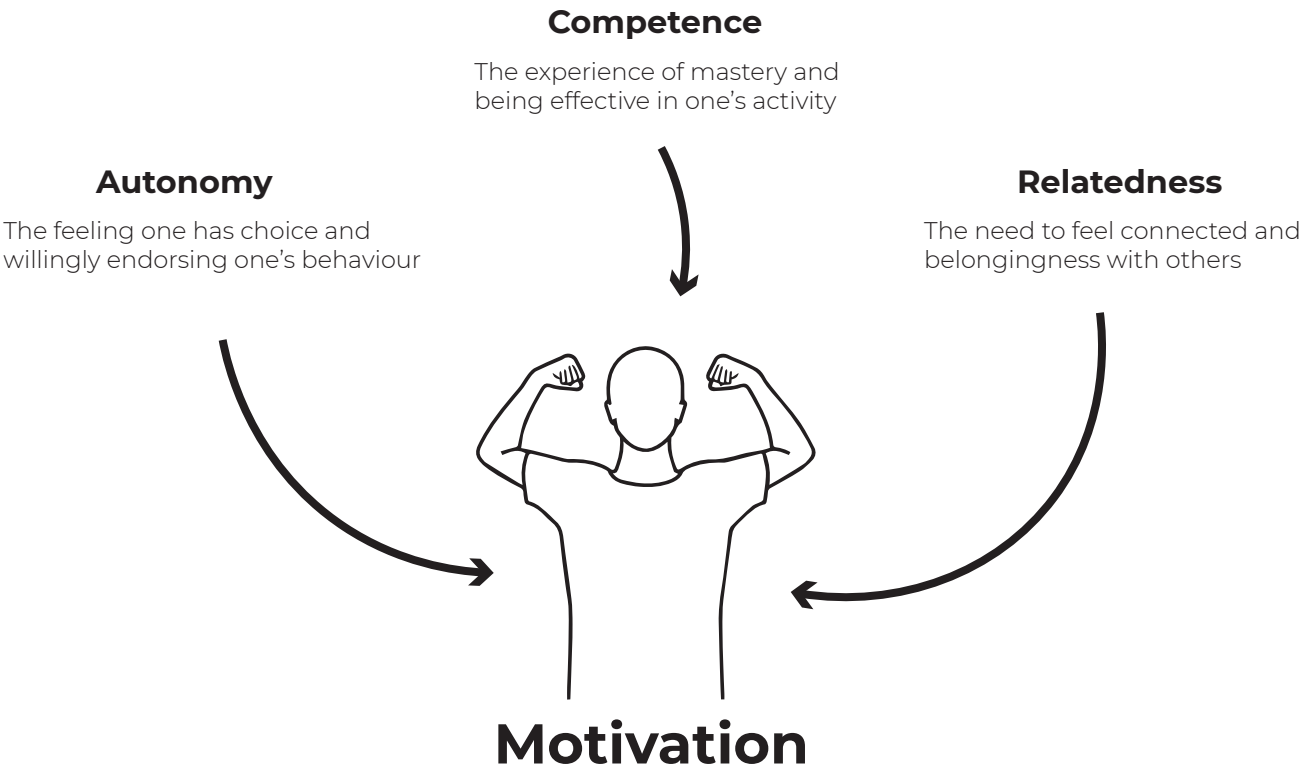


Figure 44. Diagram of the three basic psychological needs. Based on motivation behavioural model of Ryan and Deci (2000).

Focus on intrinsic motivation

The extrinsic and intrinsic motivation are interconnected as a means of motivation to achieve a goal. They influence each other and mostly happen in combination. This combination between the two result in both negative and positive outcomes. For example extrinsic motivations and the motivations of others, such as a therapist, may be beneficial (Ryan & Deci, 2000). But offering people extrinsic rewards for behaviour that is intrinsically motivated undermines their autonomy which in turn decreases their motivation. The initially intrinsically motivated behaviour becomes controlled by external rewards. This may give rise to the thought that it does not matter whether a user is extrinsically or intrinsically motivated, as long as the players are motivated. However, when designing for motivation the consequences of extrinsically motivated behaviour can become quite apparent. According to Uysa & Yildirim (2018), extrinsic reasons for participation such as obtaining rewards, gaining social recognition, release of tension or guilt significantly predict negative experiences and emotions. Extrinsic motivation for practicing a hobby is linked with obsessive passion in which the person feels compelled to engage in the activity. It contradicts with their own intrinsic reasons that are more self-determined and generally leads to positive outcomes.

Therefore focus for this sprint is to design for intrinsic motivation. The goal is to provide people with information and nudges that can help find the "why" behind the desired goal within themselves and inspire them to take intrinsic motivated action.

Designing for intrinsic motivation

The self determination theory offers an approach to motivation, considering which psychological needs are necessary to motivate a person at any given time. White (1959) and deCharms (1968) proposed that the need for competence and autonomy is the basis of intrinsic motivation. Relatedness is also linked to intrinsic motivation. Through the sense of security and the feeling of belonging intrinsic motivation has a space to flourish (Grolnick & Ryan, 1989). All three of these basic psychological needs will be defined and an explanation will be given on how they are implemented in the design choices.

Autonomy

Definition

Autonomy is the desire to be in control of one's own life and to act according to one's own thoughts, emotions and action that form the integrated self. This is not to be confused with being independent of others. It implies the psychological liberty and freedom of internal will (Deci & Vansteenkiste, 2004).

How to be implemented

For autonomy someone needs to feel a match with their own thoughts and values. It is therefore important that this person is aware of their own personal goals and values. The person should know which activities are important to them. That people already possess intrinsic motivation is an assumption that will have to be tested. Then, in the interaction with a design, there must be the possibility to make adjustments to personal preference. The person should feel the freedom to choose and be encouraged to do so. Space for autonomous behaviour must be facilitated (Pelletier et al, 1998). Obligations, deadlines and directives should be avoided (Uysa & Yildirim, 2018) as well as tangible rewards and control, as they have an opposite effect and work demotivating (Cook & Artino, 2016).

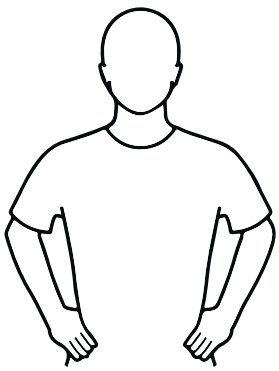
Not controlling

Match with personal goals

No obligations

Freedom of choice

Personalization possible



Autonomy

Figure 45. Main insights and design criteria for autonomy

Competence

Definition

Competence is the quality or state of having sufficient knowledge, judgment, skill, or strength. The feeling of being capable and able to accomplish projects and goals (white, 1959).

How to be implemented

To accomplish a goal it has to be achievable. It is therefore important not to set goals that are too big but to divide them over several small achievable goals. The biodiversity wheel iteration already showed that people are aware of their own abilities in order to know which goals are achievable.
To achieve goals often new things have to be learned. It is important to educate and provide information where necessary. Unexpected positive feedback also contributes to the sense of competence (Cook & Artino, 2016).

Identify own strength

Positive feedback

Space to learn

Achievable goals



Competence

Figure 46.Main insights and design criteria for competence

Relatedness

Definition

Relatedness is the state of being connected to others. The feeling that someone has caring relationships and belongs to a community (Cook & Artino, 2016).

How to be implemented

For relatedness it is important that the person can form a bond with the actors of an initiative. This can be done individually by working together with friends or family or by finding a likeminded individual. It can also take shape in the forming of a group, especially if this group radiates a certain identity and is recognizable. However, feeling connected to a group is only possible if one can identify with it and feels welcome (Cook & Artino, 2016). Since the actors of an initiative also take place outside direct involvement, contact with a passer-by can already give a feeling of relatedness.

Social contact

Personal relevance

Group Belonging

Inclusivity



Relatedness

Figure 47. Main insights and design criteria for Relatedness

See appendix E for an overview of the action cards

Iteration #3
Turning information into action

In accordance with the theoretical framework, this iteration will try to support citizens in taking action with the information they received and motivate themselves to act. In order to do this, the users are presented with action cards and are invited to take them home. When the user wants to know more about the information they received they no longer have to search for what is necessary to achieve the action they were interested in. The prototype of this iteration will be added to the prototype of the biodiversity wheel. After interacting with the prototype, the citizen and I will discuss which cards they would want to take home.

Prototype #3 Action cards

Details

The action cards consist of the two categories action and workshop (see figure 48). The actions are small one-time actions that can be repeated regularly. They generally do not take much time and are quick to perform. The workshop cards are larger undertakings that result in permanent change. Think of a tree pit garden or organizing a plant day for the neighborhood. This take a little more time and require a little more dedication. On the back of the cards is a message offering help accompanied by an email address and a phone number. The participants can use it to contact me if they want to know more, need help or want to ask questions. The participants get a selection cards that are put together based on the interaction with the biodiversity wheel. Due to this personalization, the cards will match the goals of the person and thus increase autonomy. Furthermore, the personalization ensures that people get the information they are interested in and thus have the space to learn and increase their competence. Also, some cards have been added that require them to interact with other people to add to the relatedness.

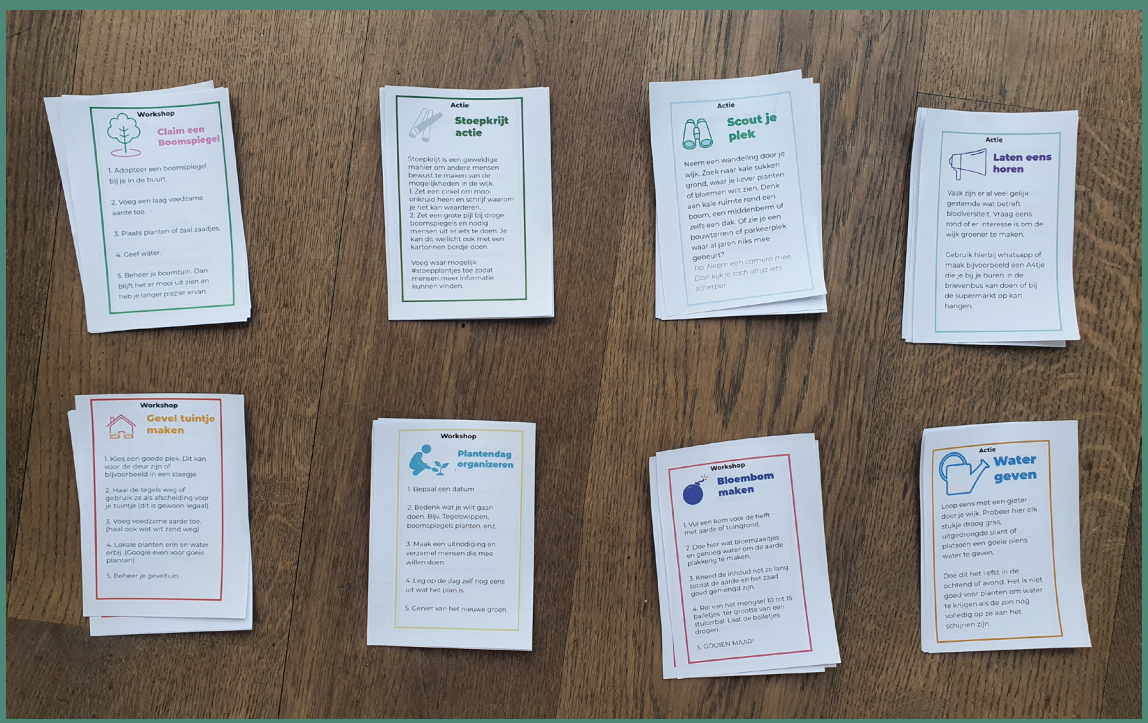


Figure 48. The eight cards of the action cards prototype.

For further elaboration on the test procedure and the results of the prototype test see appendix E.

Test procedure

In order to get valuable insights I tested the prototype with the interested but inactive citizens. I created the prototype and added it as an extra phase to the biodiversity wheel test.

Part 1 introduction

First I gave a brief explanation about the thesis followed by the question whether the citizens want to participate in a small experiment.

Part 2 interact

After the introduction I invited the participants to interact with the biodiversity wheel prototype. In the meantime I observed them and already tried to figure out which cards might suit them.

Part 3 Open conversation

After the interaction, when they have found a role, I started an open conversation on what they think their role means and if they want to take action. During this conversation I made a selection of cards. I present these cards to the user and ask them if they would like to take these home. Once the participant took the cards I asked them to go through them and speak their mind.

Results

Four participants were invited to participate. They contributed with opinions and comments. I observed them while having the conversation and while showing the cards. All insights were written down in a notebook. These notes were eventually analyzed and resulted in the following insight cards.

Help line

Despite the fact that participants had taken cards home, no one called the helpline from the backside.

"When I have free time, which is not so often, I really want to spend it on myself. Just some nice me time.".

Inclusivity

During the testing, there was also a non-Dutch speaking participant who showed interest. He unfortunately had to be disappointed as the cards were produced in Dutch.

Basic information

The cards currently provide very minimal information. The users did not necessarily think it would add much to their general knowledge.

"But I can just google this"

Disinterest

There was clearly some sort of disinterest towards the cards. After reading a selected card, the card was returned. When it was mentioned that they could keep the cards, they were accepted out of kindness. The reason for the disinterested is to be assumed to be the appearance and the minimal information

Matching cards to people

The selected cards did not always seem to match the people. When a user was not talkative it was difficult to make a good personal selection. Making a selection was sometimes based on basic assumptions.

"I think I'd rather take this card home. Do not think I'm going to perform that water action"

Discussion

Through the insights, one might conclude that the mere provision of information in a more personal surrounding does not seem to provide the incentive to act. Although the biodiversity wheel has the capability to personalize peoples interests, it is very difficult to truly comply with those interests through the minimal amount of action cards. As a result, there is rarely a match with the people to whom the cards are offered. Furthermore, the production of the cards in Dutch has in itself a negative effect on inclusivity.

Despite the action cards being a way to give people a follow-up after the biodiversity wheel's interaction there seems to be no evidence of action being taken by the participants. Despite the effort to design for the basic psychological needs of autonomy, competence and relatedness, the insights show that the iteration is lacking to fully implement them. Autonomy is quite clearly present as the user can choose what their role is, which cards they find interesting and what will be done with them. However, competence and relatedness are under-represented. Despite the information being present it does not seem to spark the feeling of competence. A way will have to be found to make the information more compelling and educating. As for relatedness there are some actions that require social contact. However, not all participants acquired these cards and therefore did not get in contact with others. For relatedness a way to promote social contact will have to be established.

Conclusion

Through the iterative testing a lot of " negative" insights came forward. These are the insights for the cards that show it does not work optimally yet. Despite the many negative insights, it is not yet time to shed this concept as many of these insights can be addressed in the next sprint. A more optimized version of this action cards iteration can be developed to gain more valuable insights.
Further exploration is necessary on how to strengthen autonomy, competence and relatedness. Furthermore, making a selection of the cards is still a vague process that is based on assumptions and depends on the person dealing the cards. Furthermore, The information seems too basic and will have to be brought to a higher level.

Conclusion: design sprint 2.

The prototype testing has mainly received negative insights. These insights show that the concept has lot of opportunity to improve. The iteration provided enough information to answer one of the research questions: Just providing information in the form of a leaflet does not seem to translate into action. The other research question on how citizens can be motivated to action could not be answered and will be taken into the next design sprint.

In this design sprint the framework to design for motivation was created and although the basic psychological needs could not properly be tested, it will be used as a basis for the following design sprints.

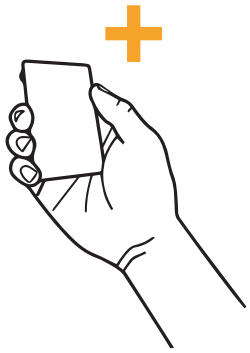
Although personalization is possible via the biodiversity wheel, it still needs to be analyzed how this translates to the cards. At the moment it is very dependent on the person who uses the biodiversity wheel.

The next design sprint will continue to optimize this concept and explore ways to enhance it.

Design sprint 3: Optimizing the concept

Forming criteria and addressing negative insights

This design sprint will focus on optimizing the previous sprint concept. In this sprint, the collaboration with Guerrilla Gardeners will have a more active function. A brainstorm and co-create session will be held to create a list of criteria to give the action card concept a clear foundation and increase the imbeded autonomy, competence and relatedness. Furthermore, GG will have the opportunity to share their in-house knowledge to give more substance to the content of the cards.



Problem statement

This design sprint is an extension of the previous one. The problem definition has therefore not changed and will also focus on translating the information into action.

Design challenge

Although the previous design sprint produced some good insights the concept still needs a lot of optimization. Therefore the design challenge is to explore what criteria are necessary to optimize the concept, turn it into a feasible design concept and to address the negative insights. The insights that will be focused on are: Matching the cards to personal preference, increasing the level of information and increasing the motivation of the user.

Sprint goal

The goal of the design sprint is to optimize the concept of the previous design sprint.

Research questions

Questions to be answered in this design sprint.

How can citizens be motivated to take action?

Which criteria are necessary to optimize the action card iteration?

How can the cards effectively be matched with personal preferences?

How to increase the level of autonomy, competence and relatedness?

Approach

In order to arrive at an optimized prototype concept for this design sprint, a co-creation and brainstorming session will be hosted with the Guerrilla gardeners organisation. The session will explore what some criteria could be to make the concept more optimized and it will provide a platform to share information. In addition to forming the criteria, the negative insights from the previous iteration will also be looked at and how these can be addressed. Through this session there will be a clear foundation as to how an improved prototype can be built. This can then be tested again and provide valuable insights.

Theoretical framework

In-house knowledge combined with design

Which criteria are necessary to optimize the action card iteration?

Together with the founder of the Guerrilla Gardening organization, a brainstorming session has been held. Ultimately, this session resulted in a list of criteria that will serve as a foundation for the following iterations.

Brainstorm approach

The brainstorm session was a combined effort with me and Cerian (aka Jenny) van Gestel, the founder of Guerrilla Gardening on the 29th of July. I started the meeting with an explanation what the goal of the session was: To get a criteria list for the cards and exchange biodiversity knowledge. Then I explained the action cards concept and the insights I received in the prototype test. After that we started the brainstorm session. After the session we summarized our findings to get a clear image of what we had done.

Collecting insights

"How can you...?" questions were used to kick off the brainstorm session and get into the creative mindset. During the HCY's we already started brainstorming on criteria and wrote and drew our ideas and findings on sheets of paper. Every time we found a new criteria we wrote that on a new sheet of paper and started a new brainstorm. These sheets of papers were analyzed by me after the meeting and resulted in the definition of the criteria.

Result

Six criteria have been found that can optimize the action card concept. In addition, other interesting insights have been found that unintentionally emerged from the brainstorming session.

Criterion #1: Structure

One of the goals of the action card concept is to let the user manage the overwhelming amount of the information available. It is therefore important that the information that is shared via the action cards is structured and can be used by the user without any extra effort.

Criteria met when, user effortlessly navigates the information provided.

Criterion #2: Guidance

The design must make clear to the user when exactly which information is important. After all, the user must receive the right information at the right time. However, autonomy should be taken into account here and allow space for own choices.

Criteria met when, user experiences the feeling of guidance.

Criterion #3 Incentive

The cards should give the users a sense of incentive, so that they experience the motivation to use the cards and take action. It is important that they are not completely guided by external motivation as this can deter the intrinsic motivation (Ryan & Deci, 2000). Some of the ways to do this are; self-reflection, real life nudges and planning

Incentive through self reflection

By supporting the user to reflect on why they want to use the cards and make the neighborhood greener, the user will be able to find out what their motives are. In this way, the user has the opportunity to discover their own motivation and use it consciously.

Incentive through real life nudges

By interweaving the physical nudge of the design concept with the user's daily activities, the user is regularly reminded. Physical incentives are both intuitive and difficult to resist. Physical nudges placed by the user, allow to make their activity socially visible and generate positive reinforcement by increased social status (Bendor, 2018).

Incentive through planning

If the user actively chooses a time and place to schedule the activities, they will set a deadline for themselves when they would like to perform the action. This could be experienced as external motivation, but the user is completely free to choose whether or not to do this.

Criteria met when user is actively nudged to act through intrinsic motivation

Criterion #4 Personalization

For the personalization, a clear framework must be created that is independent of the interpretation of the person handing out the cards. To achieve this, the card sequences will be based on the roles. This will be further explained in the theoretical framework on the next page.

Criteria met when the information matches the needs of the user



Figure 49. Brainstorm session with GG

Criterion #5 Higher level of information

The information handed out by the cards will have to be beyond the average and let the user learn something surprising or new. It is important to offer that extra layer of information so the user gets the feeling of competence by educating themselves.

Criteria met when the user has the feeling they educated themselves and feel competent.

Criterion #6 Social contact

Relatedness is part of motivating a user. The cards should respond to this and help build a community and thus increase social cohesion.

Criteria met when the user experiences relatedness.

Other insights

During the brainstorm session, two more insights surfaced. They are not necessarily part of the criteria but do have to be kept in mind when designing action cards.

Seasonal

The cards will have to take the season into account. Not every action can be performed at any time of the year and the cards must respond to that.

Examples and pictures

Providing pictures and examples can help the user to be less hesitant. A picture can show them a clear goal to work towards.

Theoretical framework

Connecting sequence to roles

How can the cards effectively be matched with personal preferences?

One of the insights of the action cards prototype test was that the process of selecting a sequence of cards is too vague and too dependent on the initiator. This insight led me to conclude that a link should be created between the sequence and the roles. Applying this method will allow to hand out preconceived sequences to the users of the biodiversity wheel.

Before these sequences will be created there has to be a clear separation between the roles. Currently, they all overlap in some way and will have very similar sequences. In order to distinguish the roles and to create more clarity and overview the roles will be reduce from six to four.

I created the following roles: the advisor, the organizer, the bomber and the campaigner.

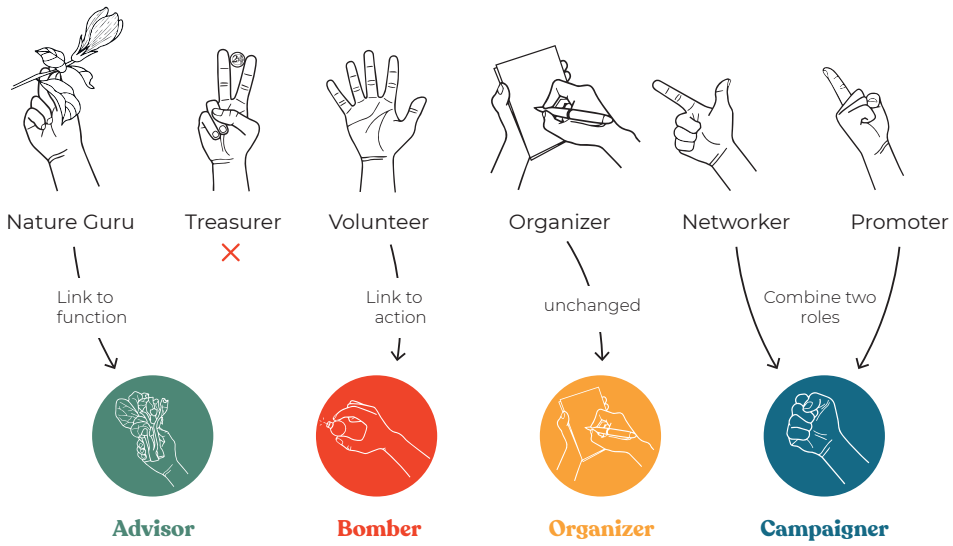


Figure 50. Diagram of role reduction

Reasoning

The advisor role is an adjustment of the nature guru role. By calling the nature guru advisor the role title is linked to a clear function which makes it immediately clear when reading it.

The volunteer is assumed to be the easy way out and people will refrain from looking at other roles. The volunteer title is changed to the bomber to hide it under a "pseudonym". At the same time, it is linked to an action which is assumed to help people to go beyond voluntarism and actually try to engage more in biodiversity action.

The organizer remains unchanged, as it already paints a clear picture of what the role entails.
The role of the treasurer often only emerges when an initiative has already formed into a durable initiative. The treasurer is therefore not a beginner's role and will not be useful for the cards, that are mainly aimed at beginners.

The networker and promoter roles have such similar functions that the sequence of cards would practically be the same. The roles are merged into one that incorporates functions of both. Thus the campaigner is created.



ADVISOR

Green thumbs and biodiversity knowledge

Definition

The advisor stands for the green thumb and biodiversity knowledge. The advisor possess knowledge about nature, plants and gardening. Local residents can turn to the advisor if they have questions or are in need of help. Furthermore, the advisor often has a guerrilla garden themselves and ensures a greener environment.

Sequence guide

The sequence of the advisor will focus on more advanced actions and getting in contact with neighbors



BOMBER

Short term action and events

Definition

The bomber stands for short-term action and participating in events organized by others. The bomber is set up for citizens who do not have much time but still want to see more nature in the neighborhood. In general, the bomber does not need to possess a lot of knowledge about nature or biodiversity.

Sequence guide

The sequence for the bomber will focus on promoting small scale actions and very basic knowledge.



ORGANIZER

Make plans and execute them

Definition

The organizer stands for making plans and executing them in groups. The organizer has a strong organizing capacity and knows where and when to deploy the right people and resources. The organizer brings people together.

Sequence guide

The sequence for the organizer will focus on forming groups and performing group activities.



CAMPAIGNER

Networking and spreading knowledge

Definition

The campaigner stands for networking and transferring knowledge to fellow citizens. The campaigner is very present in the neighborhood and likes to spread information about the impact of biodiversity. They keep local residents informed about other biodiversity projects and special events. The campaigner brings information to the people.

Sequence guide

The sequence for the campaigner will focus on acquiring information and promoting biodiversity action to others.

Iteration #4
Action cards continued

See appendix F for an overview of the optimized action cards

The criteria list and the reduction of roles allowed me to optimize the action cars. The concept now consists of a sequence of cards that are tuned to the four chosen roles. A structure has been put in place to better guide the users through it. Since the basic needs for motivation are included in the criteria list, they are also automatically reinforced when the criteria are addressed. By implementing GG's knowledge, the cards are informationally on a higher level and are expected to offer people surprising information. However, this is still something that needs to be tested. Each role now has cards inviting other people to join in which can increase social contact and relatedness. To increase the incentive, marked cards have been added. These are cards users can place in their daily live and be reminded of their efforts. I also added cards that invite them to do their own reflection and to discover internal motivation. Furthermore, all actions are now clearly displayed and supported with the invitation to schedule such an action and link it to a time and place.

Approach

To engage citizens they need to be informed about the possibilities and division of roles in initiatives. I will create a prototype focused on informing and place it in the public space. I will actively invite citizens to interact with the prototype while I observe and ask questions to gain insights.

Prototype #4 Action cards 2.0

Details

The action cards are given to a person after using the biodiversity wheel. The cards guide them through the goals of the roles and invite them to perform certain actions. Through the action cards they build a connection with the information while being at home in their personal environment. This will create a more personal link between information and possible courses of action, and therefore may be successful in shaping intentions to act and actual behavior. (Bendor, 2018)

The cards will act as a personal guide to help the user through the overwhelming information. The cards are divided into different categories; introduction, action, self-reflection, workshop and celebration. Each card is work separately which allows for a modular system. A certain sequence can be composed that fits the persons goals based on the role they chose.

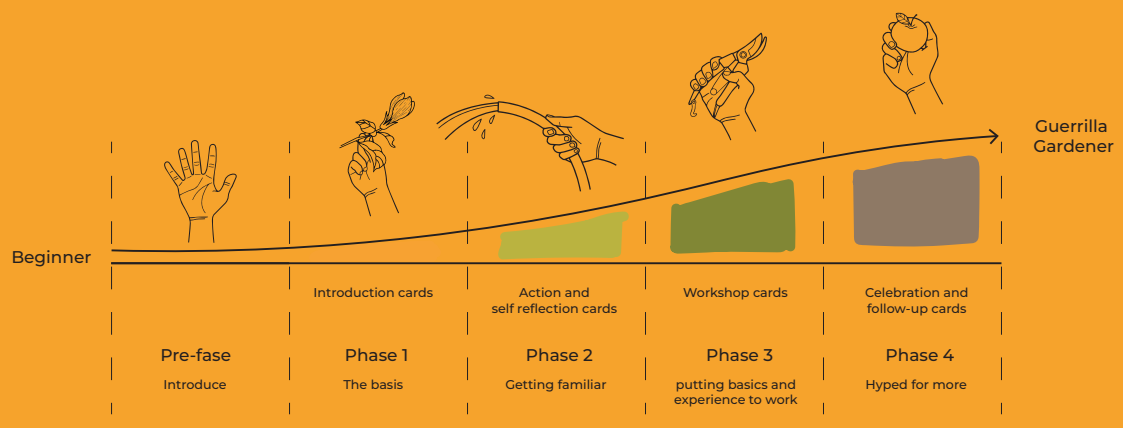


Figure 51. Phases of the action card experience

Pre-phase

In this phase, the cards are matched to the user. This can be done in several ways: an online role quiz, during or after a neighborhood party or meeting or after conversations with interested citizens. However the intention is to use these cards as a continuation of the biodiversity wheel. The choices the user has made with the wheel correspond to a certain selection of cards per role.

Phase 1: Introduction

The cards are meant to give people an introduction and basic knowledge. For example, they are invited here to take an explorative walk. During this walk they are challenged to look around for the plots of land that have guerrilla gardening possibilities. In this phase, information is also provided about the impact of guerrilla gardening, in order to perhaps strike a chord with which the user can become motivated.

Phase 2: Action

The action cards invite the user to take small momentary actions. This ranches from watering to sowing and from building a flower box to starting conversations with other residents. The action cards are intended to familiarize people with guerrilla gardening in a safe and accessible way. Personal preference was already taken into account in the pre-phase, therefore these action cards will appeal and interest to the user personally.

Phase 3: Workshop

The earlier phases have now sensitized and primed the user for a slightly larger action. The workshop cards are divided as a detailed step-by-step plan. The user can walk through this like a recipe. Each step refers to what needs to be done and how to approach it best.

Phase 4: Diploma

The last phase is a folded card that explains that it may not be opened until all cards have been used. The intention of keeping this card closed is to build curiosity so that the user experiences an extra layer of motivation towards that card.

The diploma gives a form of satisfaction and confirmation of the completion of the cards. This could be seen as a low-key reward. It is a sign of growth and competence. The diploma also contains follow-up paths that can be taken to continue biodiversity action. For example, the user is invited to perform the action cards again with friends or family, to join an existing biodiversity initiative or to take care of what they have already achieved.



Figure 52. Action cards sequence held in hands.

Test procedure

In order to get valuable insights I tested the prototype with the interested but inactive citizens. I created the prototype for the new iteration and a role quiz which could accommodate the same function as the wheel but with the four new roles. For further elaboration on the test procedure see appendix F.

For further elaboration on the test procedure and the results of the prototype test see appendix F.

Goal

The goals was to get people to use the cards in a personal situation and ,in time, conduct an interview on the experience they have had. The interview focused on the set list of criteria, the appearance and the overall experience of the interaction. The participants used the cards at home and were contacted by me after a week. They would then be questioned on their experience with the cards.

Approach offline

After the interaction with role quiz participants were handed the action cards with a short explanation on what they are for and how to use them. The role specific deck of cards is selected by me based on the results off the quiz. After that the participants are asked to use the cards and meet again for an interview in about a week.

Approach online

Participants were asked to do the online role quiz which eventually led them to one of the four prepared roles. Here they have a small explanation of the role and an invitation to download the sequence of action cards related to that role. The document contained a short explanation on what the cards are for and how to use them. They could either print the cards or use them as an online document. After a week of testing an online interview is held.

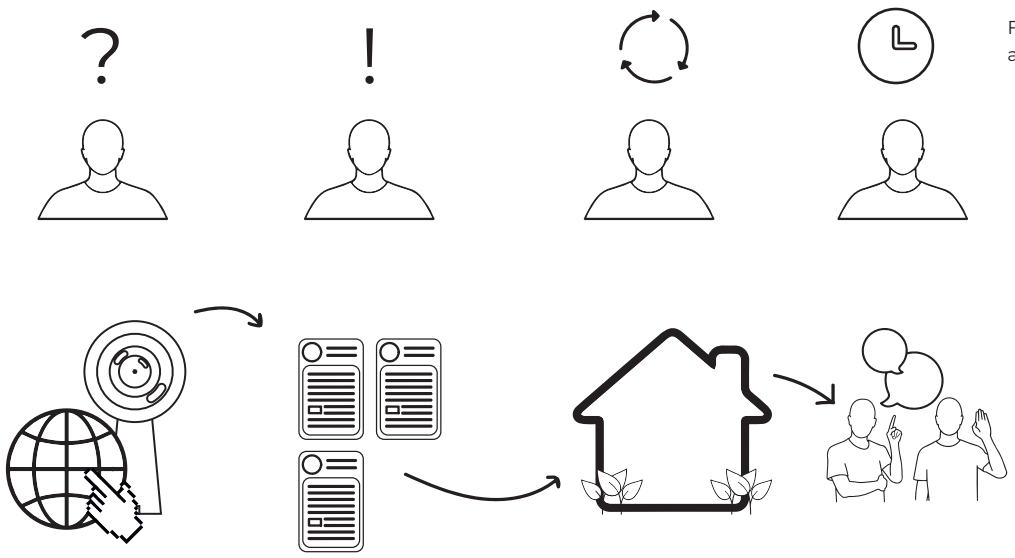


Figure 53. Storyline of the action cards test procedure

Result

Four participants from my own social bubble were invited to participate. Two participants followed the online approach and two participants followed the offline approach resulting in four participants. When the participants were contacted approximately a week later only the offline participants had used the cards. I visited the participants at their home for the interview. We looked through the cards again. This way the opinions and speculations on the cards that were not used could be acquired. The interaction with the two offline participants resulted in forming the insights cards that can be seen below.



Figure 54. Performing "scout je plek" action on a bike..



Figure 55. Participant looking through the cards

Insights improvements

Online barrier

The online participants eagerly participated in the short quiz but often pulled back after seeing the document. The document is presumed to be to extensive, resulting in information anxiety. Furthermore, they had to print the cards themselves which is already a big barrier.

Structure

It was not entirely clear that there was a sequence present. The users went pretty quickly to the action they were interested in without taking the earlier cards and preparations necessary.

"But where would I put such a planter, for example?"

Appearance

One participant thought the cards looked good. The other did not think the cards had professional appearance and that the target group was mainly older people.

Sequences simularities

All the sequences are still quite similar. More distinctions can be made, making the roles less overlapping.

Difficulty level

Seeing the difficulty level does not necessarily help. The participants indicated that they did not appreciate this, especially with the higher levels of difficulty.

Incentive
The incentive to actually carry out the actions can certainly be improved. Only one participant bothered to perform at least one action.

Huh, but am I supposed to actually do this now?"

Self-reflection
Not all participants felt completely comfortable performing the self-reflection cards. They did not necessarily think it was of any use to them.

Insights observed

Guidance
The users who followed the structure indicated that they had been guided for some time. Despite the fact that they sometimes wanted to skip a card, the information was logically structured and some of the users had been given a sense of guidance.

"A nice I do not even have to think about it with the cards followng each other up."

Information
The participants were surprised with information they were not yet familiar with.

" "Wait, it's not good for plants to be watered during the day?!"

QR-code
One participant had troubles with the QR-code and gave up in the process. The other two did check out the first few but after a while did not anymore. This might be different when they actually use the cards in a real life pilot.

Incentive
Despite the fact that the intention was to speculatively go through the cards, two participant were eager to perform an action. During the neighborhood scouting action, the card was taken along to look at the sample image every now and then.

Less roles
The reduced roles made it a lot easier to find the right cards sequence for the participant. The users could make a more clear distinction and it made it easier for them to make a choice while using the biodiversity wheel.

Match with interest
The participants indicated that the cards' information matched well with their interests.

"Oh, this action seems fun to do!"

Physical nudges
There was a positive response to the flags. The participants themselves also understood that planting such a flag is a kind of a promise to do something with the selected ground.

Relatedness
Despite the fact that the cards invite other people to join in, none of the participants actively did this. Inadvertently, participants did involve other people. for example, the girlfriend of one of the participants went on the scout because she also thought it was a fun activity.

Discussion

The test is mainly intended to be carried out in real life. In the end, this took much more time than expected and it was decided to go through the rest of the cards speculatively. As a result, the insights are mainly based on the opinions and speculations of the users.
It is visible that the users were still slightly overwhelmed by the amount of information. They had the possibility to see all the cards at once, which also caused some information anxiety. Despite the fact that a structure has been applied, none of the participants completely adhered to this.
The information seemed to match well with the interests of the participants, even though they sometimes chose to skip certain cards. Skipping cards can have multiple reasons as acting on the cards does not only have to do with interests. The willingness to act is assumed to be linked to for example: energy level, general mood or practical considerations. This is accepted as a phenomenon that cannot be designed for.
The self-reflection cards are scarcely used or performed. This is probably because most participants stem from my own social bubble and generally are known to have a fairly down to earth character. The self-reflection is a typical card that does not suit every personality. Still, it seems a good idea to add them for the users who are interested.
The QR code was used which caused a link to GG. As a result, the user already becomes somewhat familiar with the organization.
It is clear to see that the users, who are contacted online, show less interest in implementing the concept. This may be because the interaction with the online quiz is less stimulating and because the cards had to be printed out themselves. This was most likely experienced as a barrier.
It was clear that the cards invite the users to act next to informing. However, considering the insights, there is still room for improvement. The next iteration will have to optimize incentive further and emphasize on supporting people to get in contact with each other. However, the concept has made good improvements in relation to the criteria list compiled from the brainstorming session with GG. After the analysis of the insight, the following list was created:

- **Structure**
- **Guidance**
- **Incentive**
- ✓ **Personalization**
- ✗ **Social contact**
- **Information level: Moderat**

Conclusion

With the addition of new concepts such as physical nudges and guiding structure, this concept already has more legs to stand on. This iteration showes that users can be supported in translating information into action. However, it is clear that the concept is not yet fully optimized. Based on the improvement insights, an improved iteration of the concept will have to be created. Adding on to this, during this design sprint, in consultation with the members of the supervisor team, it is decided to investigate whether this concept has the potential to address other obstacles as well.

Conclusion: design sprint 3.

The explorative brainstorms and co-creation session with GG resulted in a criteria list that creates a foundation to optimize the actions cards further. The three basic psychological needs for motivation were included in these criteria giving them a clear way to design for.

According to the criteria list an optimized form of the action card is prototyped and tested. This provided insights to answer the research question if citizens can be motivated to take action. This is clearly the case as the results show that citizens can be supported to translate the information they received into action.

Although this design sprint shows promise for the motivation of the citizens the concept still has room to improve. The next design sprint will continue optimizing the action cards and try to explore the potential of addressing other obstacles with the concept.



Design sprint 4: adressing obstacles

Developing the action cards further

This design sprint will further develop the action cards in relation to the criteria list, based on the insights of the previous sprint.

However, the majority of this design sprint will take shape as a theoretical exploration. The possibilities of addressing more obstacles with the same concept will be examined. Long term commitment, vandalism and shared vision are the three obstacles that have been selected to explore. They have been selected because they have potential to be addressed on the basis of ownership experience and community building. These are two concepts that are assumed to be implementable in the cards.

Problem statement

According to GG, vandalism is among the most experienced obstacles in the biodiversity initiative landscape. Beginners quickly become demotivated if they suddenly lose their garden or see it being destroyed. Vandalism is sometimes unintentionally committed by the municipality or intentionally committed by a citizen who does not share the vision and willingly destroys a garden.

The lack of long term commitment is mainly an obstacle experienced by existing organizations and means that members do not do what they promise or do not continue their effort after a certain time. This ensures that organizations cannot always achieve their goals as they would like.

Design challenge

When considering long-term commitment as an abstract goal, ownership is one of the important pillars that emerges from the literature. Ownership is a sense of possession or forming a strong sense of association with an object. It provides people with an innate desire to take care of something (Wang et al, 2006). To bring this into the context of this project, the assumption is made that increasing ownership of the vision of guerrilla gardening, or ones own guerrilla garden, makes citizens more committed to the vision of gardening. At the same time a garden that has clear visible ownership will help to lower the vandalism towards it (Faizi & Hosseini, 2018). It is therefore a design challenge to offer the user a clear sense of ownership.

By building a community a social safety net can be created and overall support biodiversity initiatives (Berkman & Kawachi, 2015). A community allows for the increase of social cohesion and gives citizens more space to share a mutual vision (Weil, 1996). Furthermore, community feeling can increase the motivational ingredient of relatedness as it gives the citizen a sense of belonging. It therefore is a design challenge to support citizens to build a community.

Sprint goal

The goal of the design sprint is to develop the action cards further and try to address the obstacles of long term commitment and vandalism.

Approach

Both the concept of ownership, as the implementation community building will be explored in theoretical frameworks. These frameworks will help to create a foundation on which the design choices for the next iteration can be based. With the help of these two frameworks one last iteration will take shape before reaching the final design. This last iteration will provide the last insights which will help to create the final design.

Theoretical framework

Increasing the experience of ownership

How to get citizens to feel more responsibility towards their initiative?

Human condition

Possession is a human trait, it is part of the human condition (Pierce et al., 2002). As it is part of the human condition, the assumption is valid that designing for ownership applies to all humans and therefore also the interested citizens.

Effects of ownership

The feeling of ownership has important behavioral, emotional, and psychological consequences in the human-object interaction (Pierce et al, 2001). People treat objects, or in our case for example tree pit gardens, they own differently than other objects. Owners of an object tent to have an enhanced feeling of responsibility. This feeling leads to owners to be protective, nurturing and caring for the object they own. On top of that they have a heightened perceived importance to the object they own, resulting in an increasing of value (Wang et al., 2006). Furthermore, the growth of possessions produces a positive and uplifting effect in humans (Formanek, 1991). This means that acquiring ownership has an overall positive effect on their participation behavior.

However, there are also negative effects of ownership. People may become obsessed with enhancing their ownership at the cost of other people. Radical alteration of an object that they perceive as being theirs, may be experienced as personal loss and produce frustration and stress (Wang et al., 2006).

Experience of owning

It is common for people to experience psychological ownership towards various possessions such as homes, bicycles or food. The feeling of ownership is generally experienced towards an object but it can also be felt towards nonphysical entities, such as ideas (quite common among designers), artistic creations (friends who share music but want to get credits for finding it), and other people. It is also important to note here that this does not address the matter of legal ownership. Importantly, ownership in this sense is a mental state, not a legal construct. Psychological ownership is about the experience of owning (Pierce et al, 2001).

It is important to keep in mind that ownership does not just have to be focused on the gardens or tree pits. ownership can also be experienced towards the guerrilla gardening ideals and visions (Baxter & Aurisicchio, 2018).

Overall, designing for ownership may indeed create commitment. In general, the task of creating your own garden is already in line with techniques to create ownership. The real challenge therefore lies mainly in the long-term goals.

How to implement

The ownership experience can be structured and supported. Existing techniques to allow users to have an enhanced experience of ownership will be analyzed and translated into the qualities of the action cards. Example can be: placing a sign in the garden, giving names to plants, adding personal objects or placing a barrier that clearly shields the garden from the municipal land.

Theoretical framework

Support community building

How to establish a feeling of community?

Why community building?

Community building refers to ”activities, practices, and policies that support and foster positive connections among individuals, groups, organizations, neighborhoods, and geographic and functional communities” (Weil, 1996). Building communities has benefits for the community on multiple levels. One of the major ones is that a community can give individual members a sense of belonging. Through community building people feel more related to their surroundings and feel a sense or relevance (Moore et al., 2006). A community allows for mutual support as people are more willing to help each other out if social cohesion is increased (Berkman & Kawachi, 2015). By means of a community, a social safety net can be created that can carry biodiversity actions. Furthermore, by means of a community, more support and persuasiveness can be created from the municipality. H. Koolen (2022), area coordinator of the municipality of Eindhoven, stated that a municipality often does not take an individual citizen seriously. However, if this person has a whole group of people behind them, there is way more trust in the willingness of the citizens and it forms an indication for future success.

Community building seems to be a good addition to the action cards concept to support the biodiversity initiative landscape.

How to be implemented

According to Gardner (1994), there are ten ingredients that have the ability to create a sense of community. The ingredients were analyzed one by one and looked at how they could subsequently have an effect on the biodiversity initiative landscape and be implemented in the action cards.

1. Wholeness incorporating diversity

The cards should be as inclusive as possible. It should be clear and understandable for everyone. Everyone should be able to have access to it.

2. A reasonable base of shared values

Since the people who want to do something with biodiversity will use the cards, there is already a reasonable sense of shared values. If someone is invited to participate, they will only do so if they are also interested in it. The cards will have to be made as local as possible so that people can clearly support their local environment. Improving the local environment will already form a shared value.

3. Caring, trust, and teamwork

To implement this ingredient, the user will be invited to ask other people to join in the user’s activities. This way there will be a sense of teamwork. The trust and caring will be underlined by persuading the user to ask or offer help to their neighbors

4. Effective internal communication

One of the insights from the investigation of the timeline with the three organizations was that internal communication works differently for each initiative. It has therefore been decided not to address this ingredient further.

5. Participation

Guerrilla gardening is in itself a form of participation. This is currently already present in the action cards. Nothing further will be added to further emphasize this ingredient.

6. Affirmation

Via the cards, users will be invited to complement their fellow neighbors and their biodiversity action. By complementing each other they will be able to feel a sense of affirmation.

7. Links beyond the community

The user will be asked to invite people to participate, people from outside will automatically be able to get a look and feel of the community.

8. Development of young people

This ingredient is not further addressed. The assumption is that some of the participants have children and invite them to participate. Actively reaching other young people would be too far outside of the design scope.

9. A forward view

The users will have to be persuaded to keep thinking about possible biodiversity actions. Even if they have already used up the cards follow-up options should be available to keep them interested and to keep doing biodiversity action.

10. Institutional arrangements for community maintenance.

The role of the organizer and campaigner will be assigned an action in which they contact the municipality. This allows an open conversation to start and the options that are possible for municipality support can be investigated..

The framework for both the experience of ownership and community building will help to further develop the action cards. The next iteration will show a more developed version of the earlier action cards iterations.

Iteration #5
Pre-Final

This last iteration will improve the action cards in terms of structure, guidance, incentive, social contact and information. In order to do this, the visuals have been upgraded, more compelling sequences are introduced, a ownership phase has been added and community building is applied.
Despite this being the last iteration it will not function in the same way as the others as it has not been prototyped and tested with users. The reason for this is that the experience of ownership and community building can only be tested by a real life pilot. However, the iteration does serve as a small intermediate step towards the final design. This iteration will be presented to experts and users will contribute to the project as a last concept check before the final design is created.

Prototype #5 Action cards 2.0

Details

Based on the frameworks two phases are added to the action card concept corresponding to the structuring the experience of ownership and building.
In the second to last phase of the cards, the user is invited to apply techniques to feel more ownership for the realized biodiversity action. These cards help structure and accelerate the sense of ownership.
In the last phase, after the user has completed his guerrilla garden, they are is invited to build a community and involve more people who are interested. This is done on the basis of the ten ingredients of Gardners (1994).

Based on the insights of the last iteration some changes have been applied to the action cards.

Appearance
The visuals have been upgraded to look more professional to appeal to a wider audience. It is a deliberately minimalist design with clear color indications to distinguish the phases.

More diverse sequences
A number of cards have been added to further differentiate the role sequences and make the card sets per role more unique.

Keep track
To increase the structure a new system of using cards has been introduced. The cards have to be turned around one by one. Now the user can easily use the cards with a frontside and backside.



Figure 56. Cover images of the phases of the action card concept

Test procedure

In order to get valuable insights the prototype has been presented to experts and users from my social bubble. I created a concept pitch and showed this online to the TU/delft supervisors and offline to three potential users. Their opinions and comments were translated to notes of improvement.

Notes of improvement

Clear structure
The new structure seems to be clear. However, it has to be clearly explained to the users in order to make it work.

Owning taken to far
When structuring ownership, it is important to keep in mind that the users do not go too far in their claiming behaviour.

Community built throughout
community building seems like a good addtion. However, doing it at the end seems like an approach that misses oppertunities of social connection. The community building should happen throughout the phases.

Appearance
The new appearance received positive feedback from both young and old.

Conclusion

Although the iteration has not been prototyped and tested, discussions with experts and users have produced notes of improvement. Despite the fact that the structure now seems to work quite well, the users must receive a clear explanation to implement it. The appearance seems appealing to a wide audience. There are some concerns about the structuring of ownership. The negative effects of citizens claiming to much should be addressed. In this iteration the community building happens at the end of the card sequence. However, community building should be present throughout the card sequence in order to get the most opportunity to succeed.

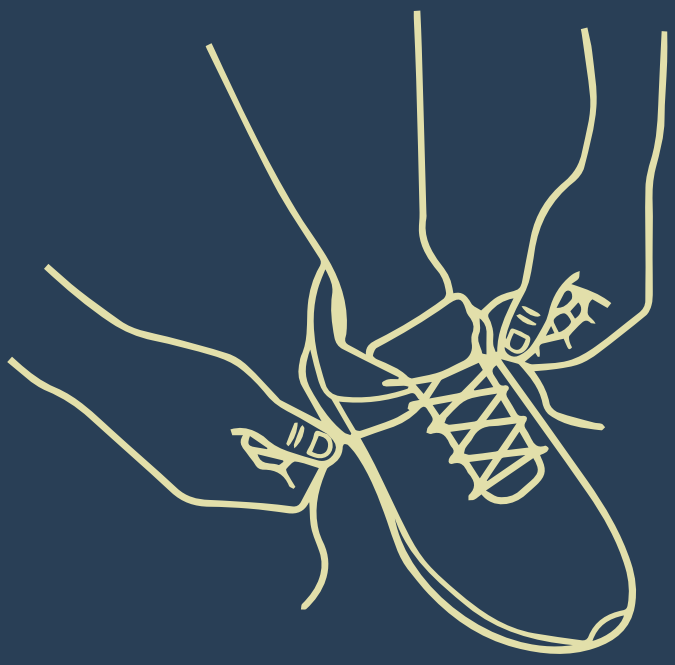
Conclusion: design sprint 4.

This design sprint shows that the concept is capable of addressing multiple obstacles. The theoretical frameworks elaborate that the cards can be used for both ownership and community building. Proof whether this also has the desired effect in real life will be provided later in the evaluation.

A new iteration of the action cards is discussed with experts and users resulting in the notes of improvement. These notes will contribute to the last design cycle towards the final design.

Conclusion: All design sprints

Based on the design sprints and the insights of this chapter, a clear picture has emerged of how design can contribute to the bio-diversity landscape. Not only the insights but also the prototypes that are used for research through design have the potential to make for a good final design.
The prototype tests have resulted in various insights and, despite the many obstacles, have developed a clear scope and foundation to create the final concept. Now the challenge is to translate the gathered knowledge and insights to a final design. This is a matter of analyzing and combining the iteration. The iterations seem to have the potential to work well together as a whole and when put together correctly they can form the final design.



Chapter 4

Final concept: Growing the Movement

This chapter provides an elaboration of the "Growing the Movement" concept. The concept was established by combining the earlier prototypes of the design sprint into a one design. When combining the goals of the prototype iteration it provides the design goal of this final concept:

"I want to design a tool that can enable interested but inactive citizens to get familiar with initiative information and take action towards a durable initiative."





Figure 57. The cards of the biodiversity cards concept



Figure 58. The biodiversity wheel of the biodiversity cards concept

Growing the Movement

What

Growing the Movement is a new participatory tool that guides interested citizens through the biodiversity initiative landscape and its possibilities.

How

Growing the Movement consist of two parts: the biodiversity wheel and the action cards. They work together in a successive symbiosis. The first part, the wheel, is meant to grab the citizens attention and invite them to engage in the first interaction. Through the interaction they explore their personal preferences and choose a possible role they want to fulfill within a biodiversity initiative. They will be directed to a set of cards that matches the role they choose. At home, this set of cards will guide them step by step to fulfill the function of their role. The cards will take the user through different phases of difficulty and skill and introduce them to bottom-up participation. They will be educated and supported in taking biodiversity action to influence their own local environment.

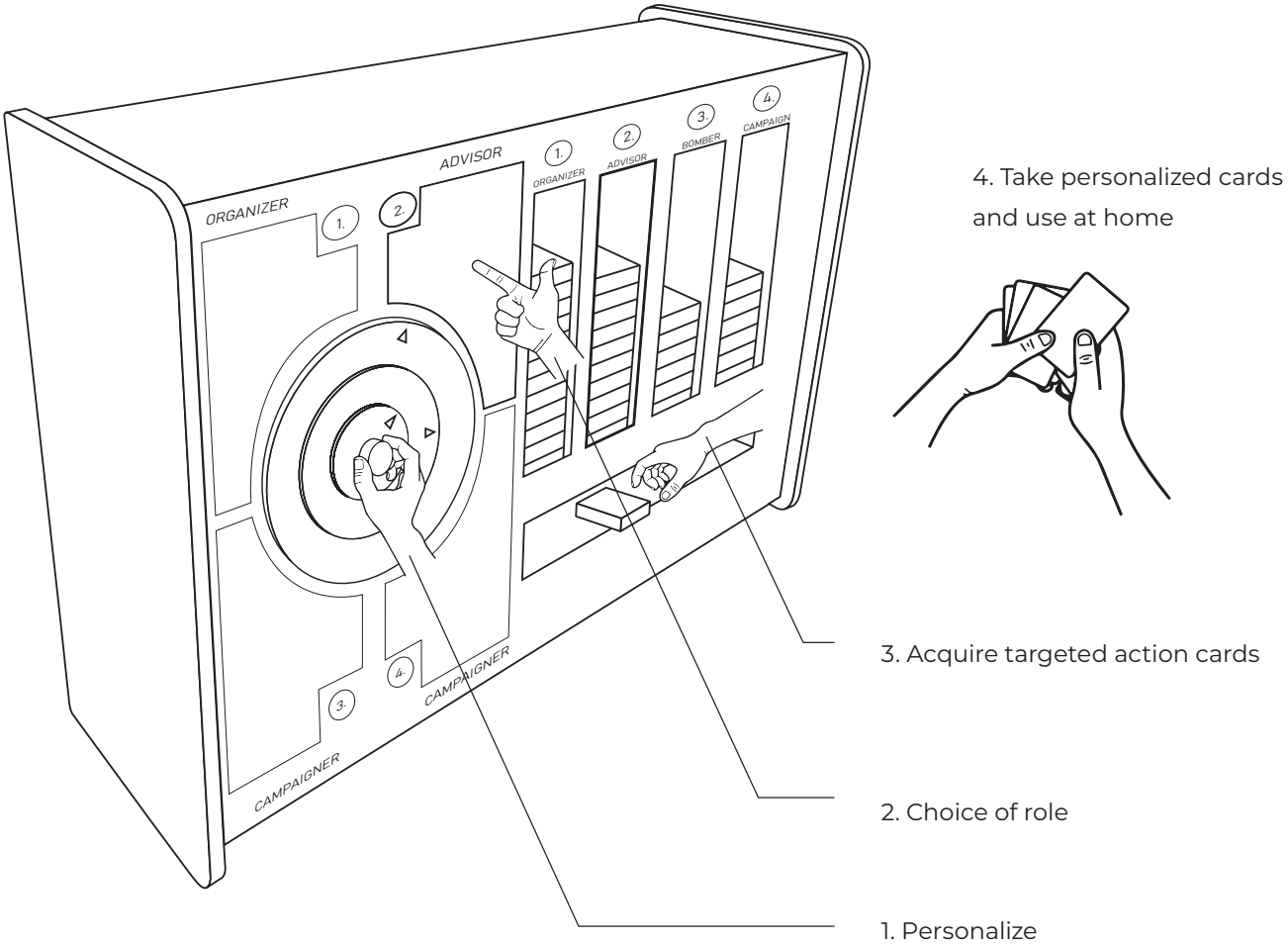


Figure 59. Storyline of the usage of the wheel



Figure 60.The cards part of Growing the Movement



Figure 61. DIY variant of the biodiversity wheel being used by a citizen

Value for citizens

The concept helps citizens to become familiar with initiatives in an accessible and playful way. They will increase their knowledge and skill to actively change their local surrounding into a more biodiverse one. By using the action cards, citizens are stimulated to enter into conversations with local residents and increase social cohesion. And last but not least, it empowers citizens to be a part of the bottom-up participation landscape and have a say about their surroundings.

Value for initiatives

Through the cards, more people will come into contact with the possibilities of biodiverse initiatives. Familiarity with biodiversity initiatives will increase, which can ensure that more people are aware and willing to join an initiative. Furthermore, initiatives will be able to use the concept to grow their initiative and actively attract people to join their efforts.

Value for municipality

Growing the Movement gives the municipality the option to increase the bottom-up initiative in specific areas. By distributing the action cards they can passively activate the citizens and increase the participatory efforts of citizens. Through participation citizens will increase their trust towards the municipality.

Usage scenario

Discover

While Sam is walking towards the supermarket she stumbles upon the biodiversity wheel. Curious about the odd looking machine she takes a better look. She soon realizes that the machine is about making the neighborhood more biodiverse. Sam has always been interested in this but has never really acted on it. She is curious about what the machine has to offer and starts the interaction with it. She spins the wheels to see which role suits her. The role of the advisor turns out to be her personal pick. She pays two euros and puts the pack of cards in her pocket. After doing the groceries she wants to take a better look at them.



Take action

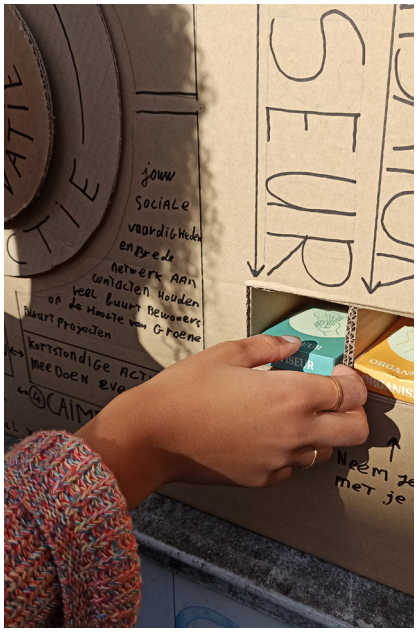
Once at home, Sam puts away her groceries and sits down at the table to have a look at the deck of cards. She reads the introduction and explanation and follows the order of the cards. Curious, she goes through them until she encounters an action. Unfortunately, she does not have time for this at the moment, but she checks her agenda and sees that she can perform this action during lunch.

A couple of days or weeks go by. After performing several small-scale actions, Sam has become comfortable with green action and is ready to carry out a workshop card. She scouts the neighborhood again and finds a nice tree pit which she wants to claim. She starts transforming the tree pit and eventually has her own tree pit garden.

Sam has now made the neighborhood a little greener and gained experience in guerrilla gardening. This will help her in the following green actions. Despite the fact that Sam finished the action cards, she is now familiar with the possibilities and remains committed to a greener neighborhood.




①ADVISEUR
②ORGANISATOR
PLANNEN MAKEN EN
UITVOEREN
ADVISEUR


SEUR
jouw
SOCIALE
netwerk AAN
Neem je
met je











The wheel

The design decisions of the biodiversity wheel are based on the insight of the first iteration. The design is rather similar to the first prototype. However, some changes have been implemented to optimize the concept.



Figure 62. The prototype of the Biodiversity wheel

The wheel concept initiates a moment of connection between the citizen and the municipality or initiative. The citizen interacts with the biodiversity wheel and explores which initiative role might fit them. Just like the first biodiversity wheel prototype the wheel consists of four layers: constrains, motivation, inspirational action examples and the explanation of the roles. The citizens are invited to turn the wheels to choose one of the four possible roles that fit them most. The wheel is a helpful tool to guide them but they are not obligated to follow it's suggestion. After picking a role the citizen can acquire a deck of card that is optimized towards it.

By following this sequence of actions the citizen has unknowingly got acquainted with information, personalized the follow-up information provided by the cards and was motivated to take the first steps towards active participation.

Autonomous machine

The concept is combined with a dispenser machine. The wheel is still used to personalize the choice but now the user can also pick up a pack of cards from the machine themselves like a vending machine. There is no need for a person to be present to hand out the decks of cards. The dispenser part of the wheel ensures that it can be used autonomously. This autonomy makes it easier to be placed and used over longer time and quantity.

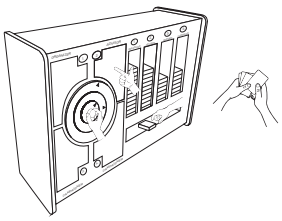


Figure 63. The wheel as an autonomous machine

Pay barrier

A small contribution of two euros is requested before a user can take a pack of cards. This is done for two reasons. The first is that people are assumed to make a more conscious choice when taking a deck of cards. People will not quickly claim all four roles and then use only one or none at all.

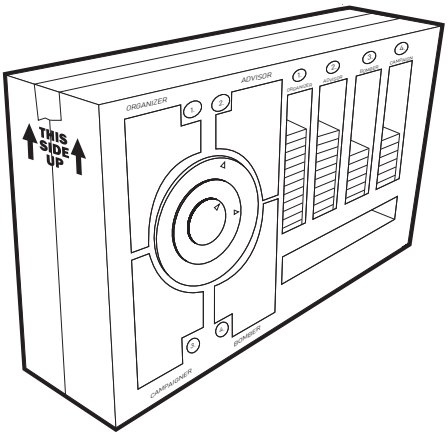
The second reason is that if people pay for a deck of cards, it is assumed that this person is more likely to use the deck. They will want to get the value out the two euro they paid for it.



Figure 64. Two euro pay barrier

Permanent and DIY variant

Growing the Movement will be usable for initiatives as well as for municipalities. A distinction has therefore been made between a more permanent variant of the wheel and a DIY variant. The permanent variant will be made of durable material and can be placed autonomously in a public place by the municipality. The DIY variant can be built almost for free by residents or initiatives themselves out of cardboard. This DIY variant is to be used on the street, during neighborhood meetings or sustainability fairs.



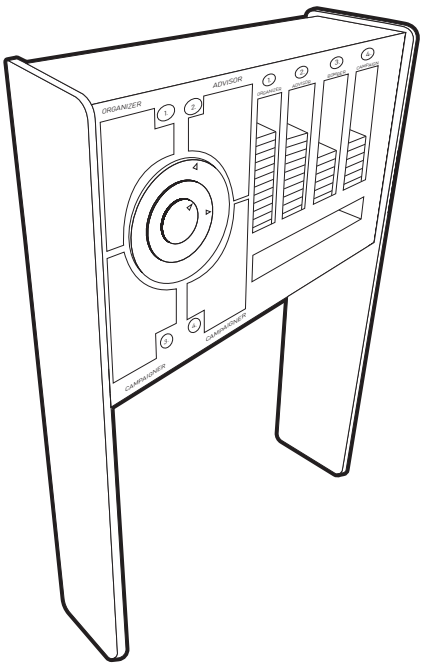


Figure 65. A DIY and permanent variant of the wheel

Details

Details about the biodiversity wheel

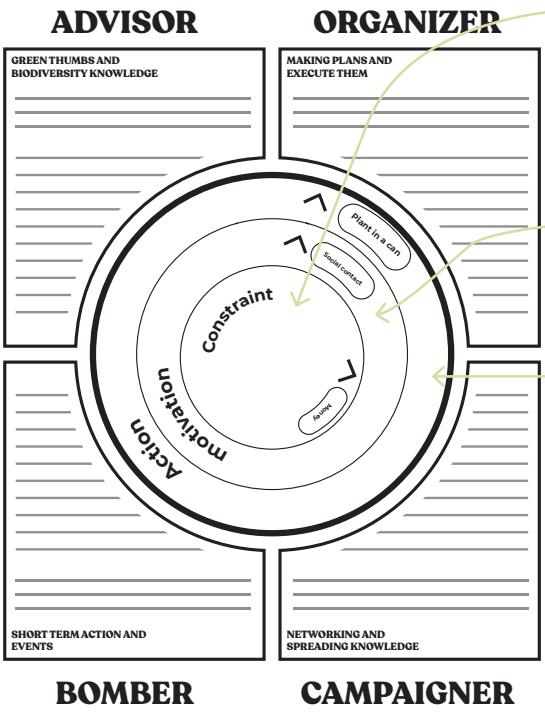


Figure 66.The wheel zoomed in

Layer: Constraints

This layer helps figuring out the constraints one might have that prevents them from taking action

Layer: Motivation

This layer helps the user explore their personal motivation

Layer: Action

Examples of biodiversity action aim to spark the users imagination and inspire them.

Roles

The role layer helps explains the functions of the roles. Once they have chosen a role they will be able to find more indebt information and the things they can learn by carrying out the role.

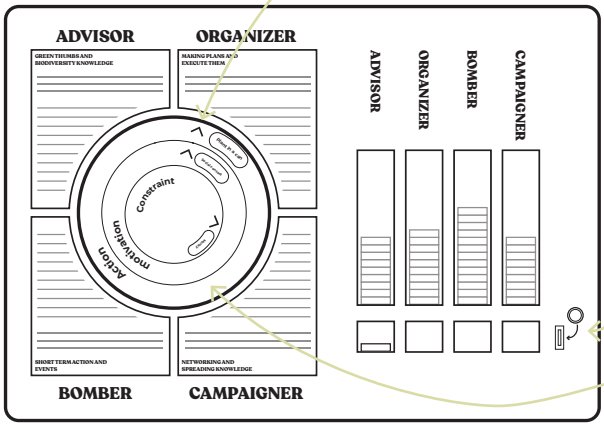


Figure 67. The biodiversity wheel in detail

Arrows

Arrows have been added to link the choice even more clearly to the roles. They point to the role that belongs to the choice.

Vending machine

In the permanent variant the cards will be stored out of reach. By paying, the user can purchase one of the card sets just like a vending machine.

Mystery

The layers purposly hide all options to create a feeling of discovery and mystery. People will feel more motivated to interact with the wheel if they have new things to discover.

The action cards

The cards come in four different sequences for four different roles. Although the sequences are all different, the cards follow the same structure of use. The user is slowly but surely introduced to the function of their role. By means of the cards the user is educated about the possibilities of biodiversity action. This inspires them to take action and thus participate in bottom-up participation.



Figure 68. The action card sequence of the advisor



Figure 69. Cover of the action card phases

Step by step

In the pre-phase, the citizens receive a package containing action cards that have been personalized to them. At home, in a trusting environment, the action cards take the users by the hand and guide them through the extensive information. Instead of large chunks of text, they now have a structured learning process. The action cards consist of six phases, each of which represents a part of the biodiversity initiative timeline.

The phases

- 0. Cards explained; The citizens receive an explanation of how the cards work and how to use them correctly.
- 1. Biodiversity introduction: The basic principles of biodiversity are introduced. The user is invited to discover the neighborhood with a biodiverse perspective.
- 2. Small-scale action: The user is challenged to take small and accessible actions to become familiar and comfortable with biodiverse actions.
- 3. Workshop: Through these first three phases the user will be sensitized to start a larger action provided in the workshop phase. The workshops show the user how to take more permanent biodivirsity action such as a facade or tree pit garden.
- 4. Sharing and Caring: Once the permanent changes of the workshop have been completed, emphasis has to be placed on maintaining the realized effort to create a durable initiative.
- 5. Celebration: After finishing the cards the user is invited to use the gained experience to continue their effort to make their neighborhood more biodiverse.

Throughout the phases the citizens will be assisted with self-reflection to increase their intrinsic motivation. Each phase is combined with community building moments to increase the social cohesion and to create a social safety net.

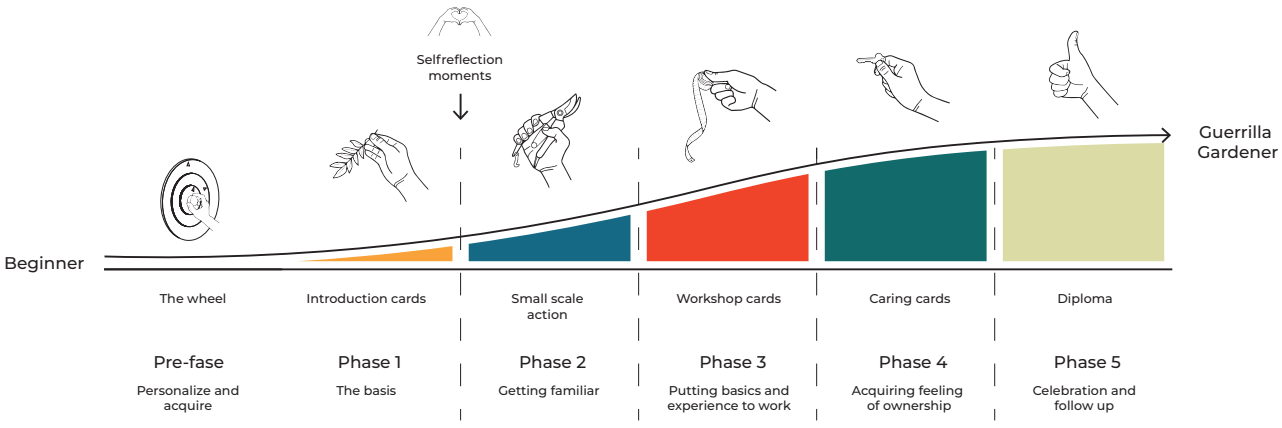
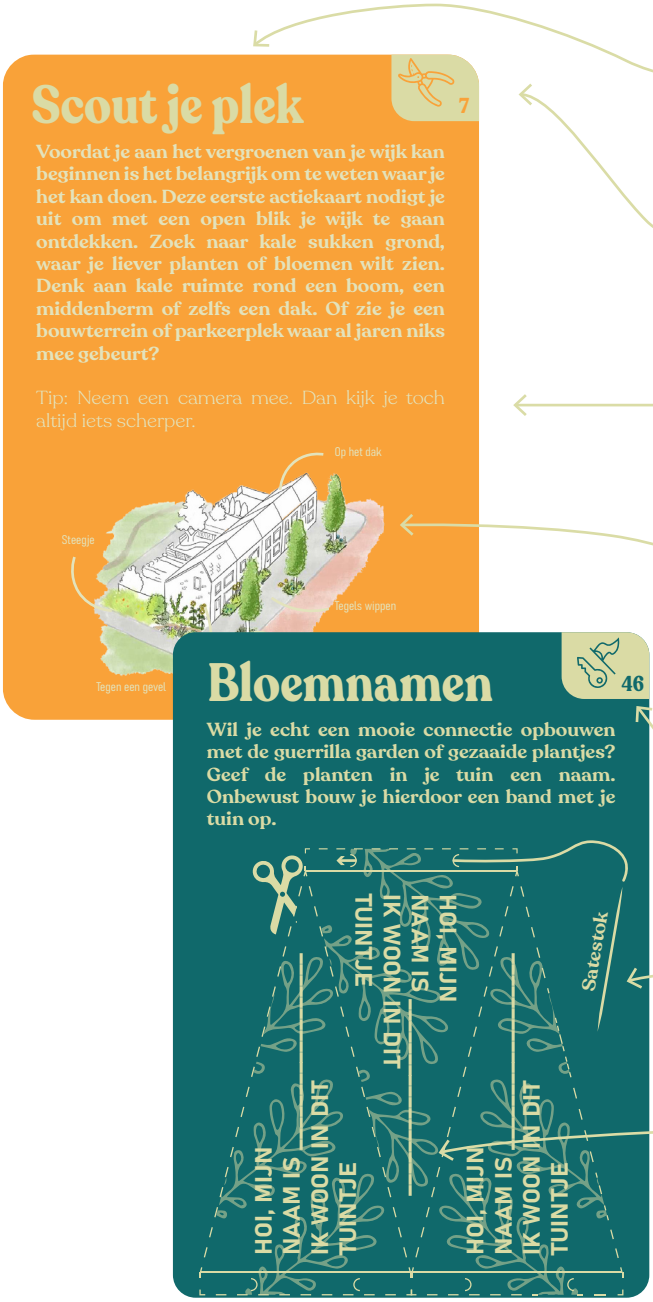


Figure 70. Phases of the card deck

Details

The cards are all unique on their own but follow the same general structure. The image below will show the details.



Title

The title gives an instant summary of the function and purpose of the card.

Category

With the help of an icon, the way to approach the card is instantly clear.

Tips & tricks

The user is assisted with tips and tricks. This way the user's effort can be made easier and more functional.

Example image

Many cards have an image to visually assist the user and to provide an example with the text.

Numbering

A numbering of the cards is provided in case the cards get mixed up.

Color indication

The color of the cards show a clear distinction between the phases.

Instructions

Cutting lines and indications where holes must be made are specified with clear visual instructions.

Figure 71. "scout je plek" and "bloemennaam" from the action card deck

Phases of the cards in detail

This section provides a detailed explanation of each phase accompanied with a set of example cards. For the full explanation per card see appendix G.





Phase #0 Explanation

Before the user can start, an explanation is given about the purpose of the cards, how to use them and what the full content of the box is. Through this phase the user knows what to expect and will use the cards as intended.





Phase #1 Introduction

The main goal of this phase is to give the user a clear foundation to use as a kickstarter for the rest of the cards. They will be asked to discover their neighborhood and they will be educated on the impact that biodiversity action can have. After going through these cards the user should have: A clear view on why they want to participate, an increase in intrinsic motivation, a plot of land selected to renovate or use and a feeling of how the cards work.





Phase #2 Action

During this phase the user will get comfortable taking biodiverse action and changing their surrounding public space. They will be invited to perform small scale role specific actions. The action cards are intended to familiarize people with guerrilla gardening in a safe and accessible way. After going through these cards the user should: feel comfortable affecting the public space, increase their knowledge and have their first attempts at building a community





Phase #3 Workshops

After the introduction and the small-scale actions the user should feel comfortable enough to take on some bigger and permanent action. The workshop cards take the user step by step through the process. The organizer and campaigner both receive an organization workshop. With this workshop they will gather a group of interested neighbors and then carry out a regular workshop with them.



Phase #4 Sharing and caring

Now that the user has made a more permanent change, it is important to maintain it. The sharing and caring cards structure the experience of ownership to make the user feel responsibility and care for the realised garden. In order to prevent excessive ownership, the cards convey that the garden will still remain a public area and therefore for everyone to enjoy, despite the fact that the user is the "owner".



Phase #5 Celebration

At the end of the card sequence, the user encounters the celebration phase. In this phases it is noted that the users have learned quite a bit with the cards and can now call themselves a guerrilla gardener. This gives the user a feeling of competence and will be more motivated to take action themself. Suggestions are also made for follow-up steps and self intiated action.

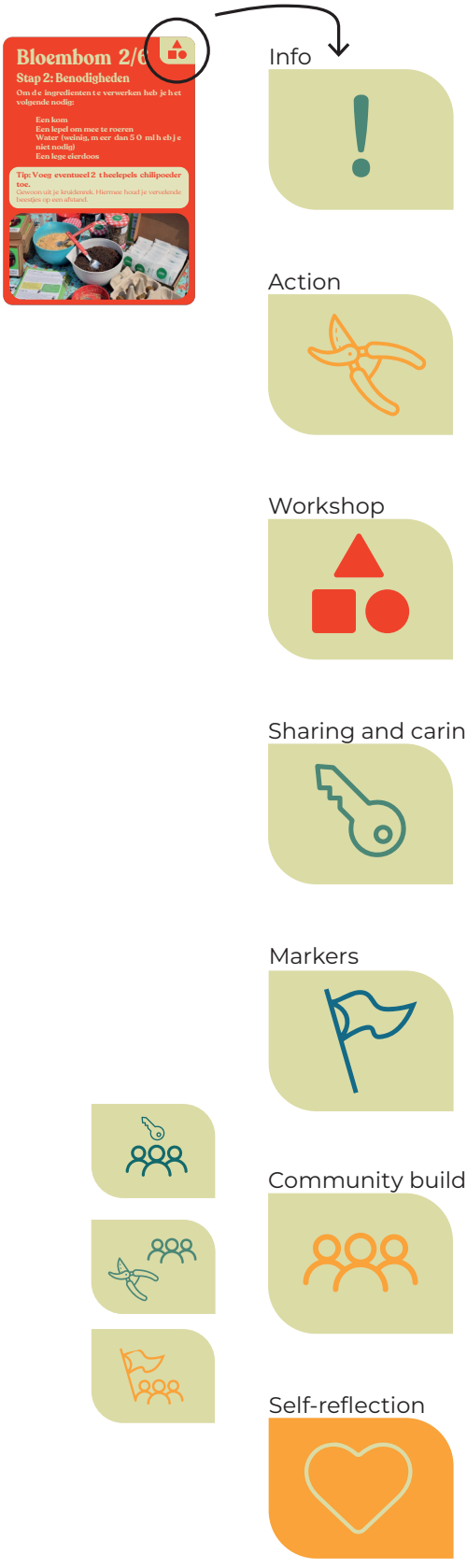


Between the phases, self reflection

After every phase there is a self reflection card. These cards allow the user to reflect on the action they took and how it makes them feel. They make the users think about themselves and about the value of the biodiversity in the neighborhood. The cards allow them to discover why they want to take action. Through these self-reflection cards the users are hoped to increases their intrinsic motivation.

Categories

Categories have been added to make the cards more legible and clearer to read. This allows the user to see at a glance what the purpose of the card is.



The function of the information category is to educate or inform the user. These cards are mostly text-based

The function of the action category is to get users to do something in real life. These cards invite people to get familiar with undertaking action.

The function of the workshop category is to guide a users step by step through a more difficult action. They work like a recipe for cooking.

The function of the sharing and caring category is to structure the feeling of ownership and let users take responsibility of the created guerrilla gardens.

The function of the markers category is to let users take parts of the cards and place them in the real world. Users are invited to cut out a part of the card and place it in their day to day life as a helpful tool or reminder.

The function of the community category is to interweave the ten ingredients of community building through the card deck. The user is invited to build a community through these cards.

The function of the self-reflection cards is to let the users become aware of how they feel about their actions and why they do it. This is hoped to enhance the intrinsic motivation of the user.

Figure 72. Icons from the action card deck

Card order

The cards are already in a preconceived order and are meant to be used in turn. Each card has a front and back side. After the user has used the front, they turn the card over. Here one performs the back, but can also already see what the next card contains. In this way, the user follows the card sequence but can also be made curious for the next card.

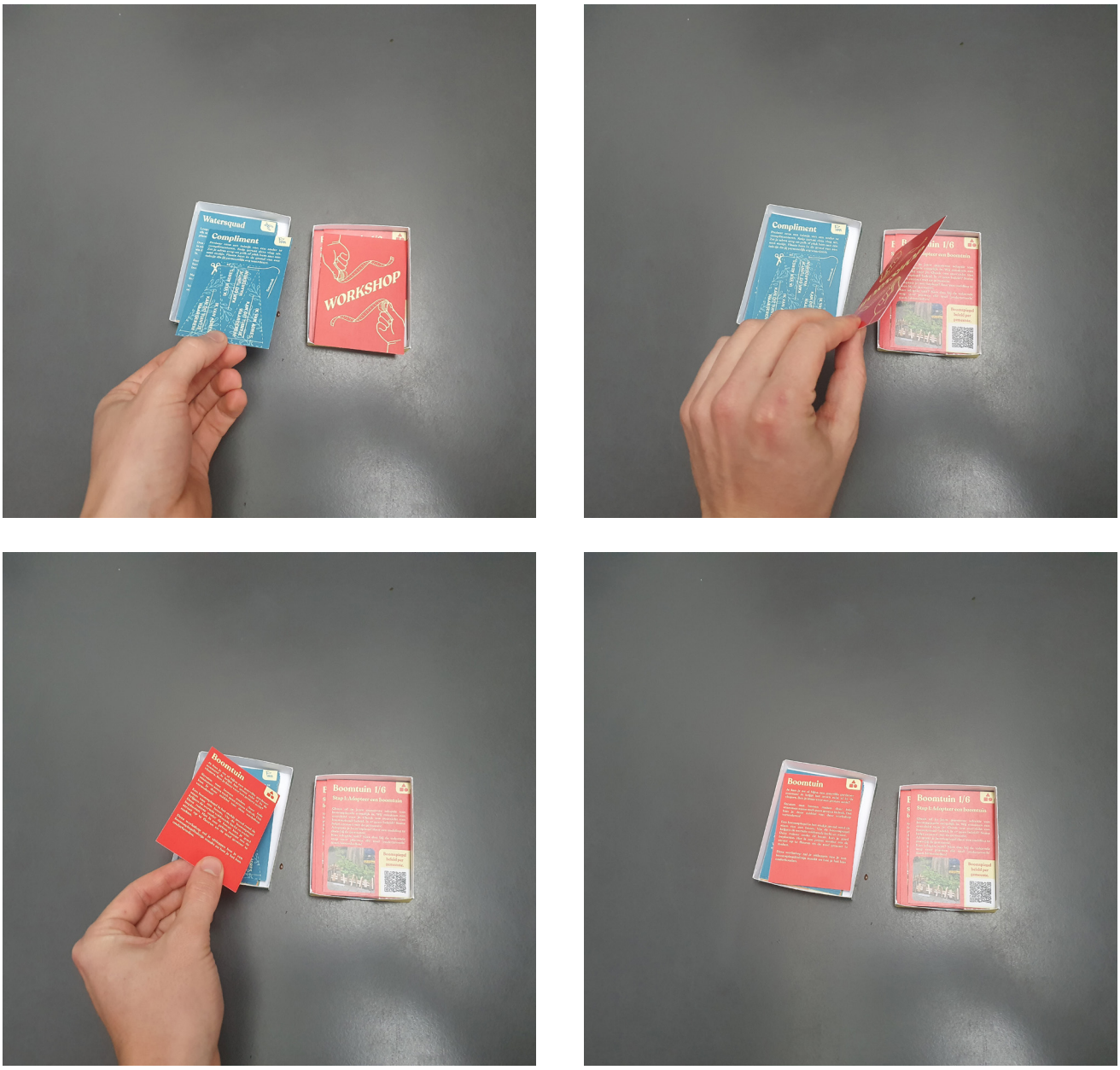


Figure 73. Use of the card structure

Distribution

The whole purpose of this project is to support bottom-up biodiversity initiatives with design. The more citizens that are reached, the greater the impact can be. In order to really support the bottom-up movement, the distribution of the concept must therefore also be considered. There are two possible approaches here: the DIY approach, taken by citizens and the permanent approach, taken by municipalities.

DIY

The DIY approach comes from the citizens themselves. This can be done by the bottom-up biodiversity organization as well as by the individual citizen. Both have easy access as the card set is intended to be open source and usable by anyone.

Organisation

When the initiative implements Growing the Movement, members will have the option to download and print the cards. Next to it, a building manual for the biodiversity wheel will be provided. With the use of the manual they can easily produce a cheap DIY version of the wheel from cardboard. Once fully assembled the organization can address other citizens and make more people enthusiastic about biodiversity action.

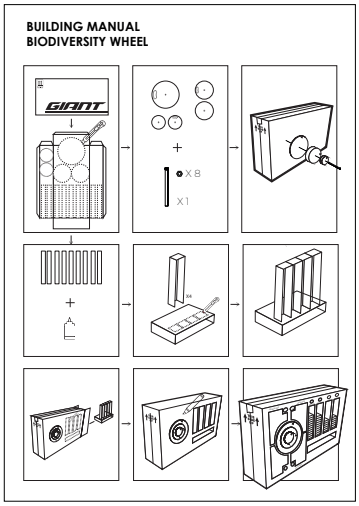


Figure 74. The biodiversity wheel building manual

Individual citizen

After the last phase, an extra phase has been added to the campaigner role, in which the building manual, the quartet game and a download link to the cards have been added (see appendix G). So if an individual citizen is still enthusiastic about promoting biodiversity action after using the cards, they can duplicate the cardsets themself. In this way, this citizen suddenly becomes a distribution point and contributes to the growth of the movement.

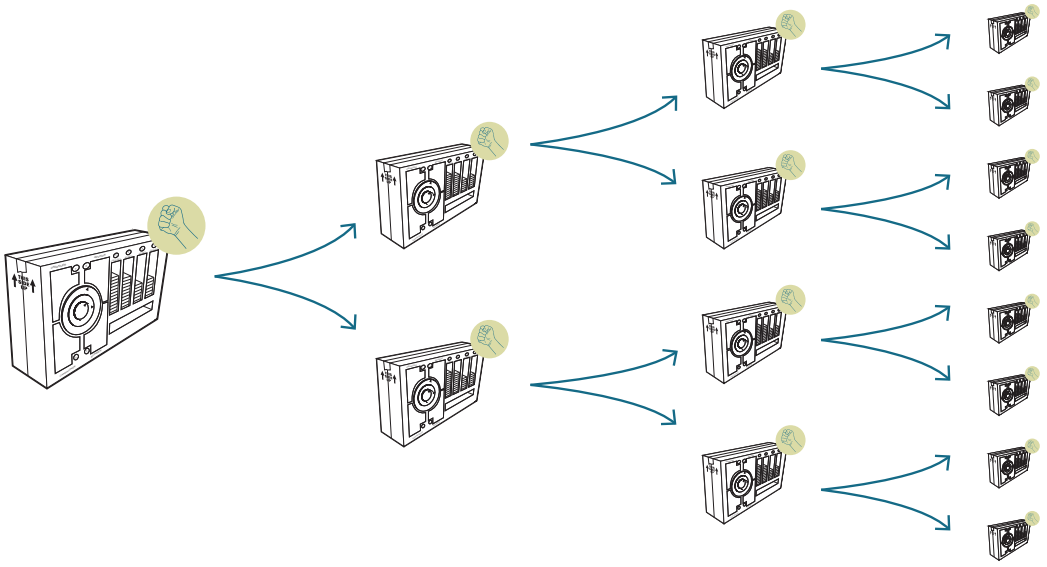


Figure 75. The biodiversity card concept duplicating itself

Municipality or sponsorship

The permanent approach is carried out by the municipality. They can subsidies a bottom-up initiative campaign using the cards to get citizens to act out more bottom-up initiatives. Companies or other organizations can also finance the permanent approach in the form of sponsorship. Through this sponsorship they are able to link sustainability to their name and enhance the company's image.

Since participation is something that is desired by many municipalities, this concept can contribute to strategically increasing bottom-up participation. The municipality will be able to select a part of the city or district and "inject" bottom-up initiatives.

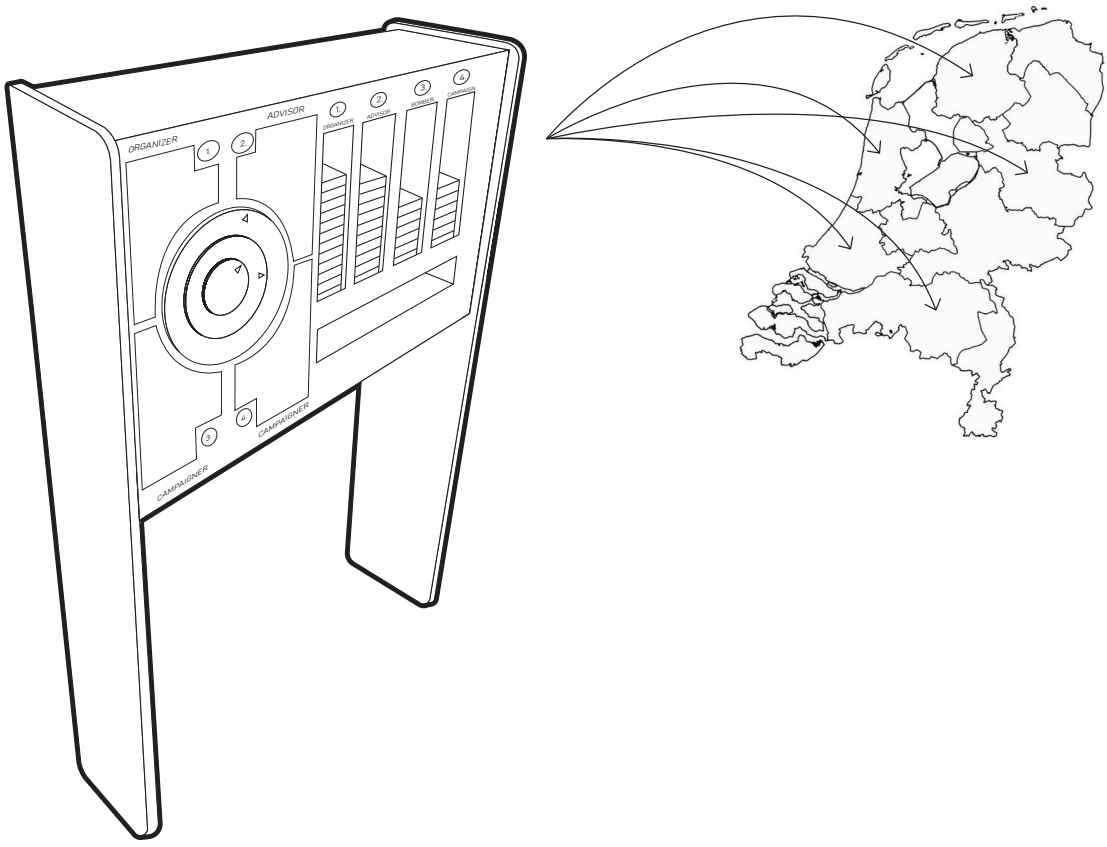


Figure 76. Permanent version placed by multiple municipalities in the Netherlands

Chapter 5

Evaluating the concept

This chapter aims to give insight in the evaluation process of the Growing the Movement concept. The evaluation gives an overview of the citizens' perspective, the organization perspective and a real life example situation: "De Trouw Duurzame 100" exhibition in Pakhuis de Zwijger. A prototype of the final concept was created to test Growing the Movement during this phase of the project. The insights gathered in the experiments are used to evaluate the concept on its intended design goal and future use.



Evaluation approach

In this chapter, I will provide the evaluation and validation of Growing the Movement. By presenting the concept to the expert I can create an evaluation based on knowledge and experience of the biodiversity initiative landscape. By presenting the concept to the users, I can check whether people without any knowledge understand the concept and if it increases their motivation to act.

Final concept prototyping

In order to validate the final concept, I materialised Growing the Movement into a prototype. The prototype will be explained in full detail to experts of the biodiversity initiative domain. A evaluation session will follow where I will be identifying the following aspects: Meeting the criteria, recommendations for further development and the value for the collaborating organization, Guerrilla Gardeners.

After the expert test, I will gather five citizens and test the prototype with them. The full use of the concept can easily take up several months therefore, they will be asked to go through the cards and speculate on the use.

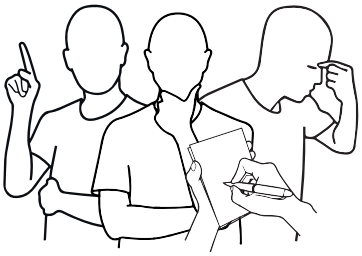


Figure 77. Testing with the expert

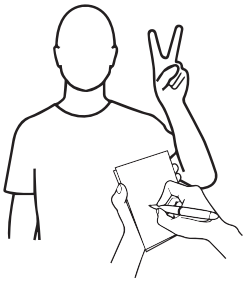


Figure 78. Testing with the users

Exhibition Pakhuis de Zwijger

The Guerrilla Gardeners organization is invited to host a stand at the "Trouw Duurzame 100" exhition in Pakhuis de Zwijger in Amsterdam. The prototypes will be part of their stand which gives me the opportunity to test the prototype in an actual real life situation.



Figure 79. Logo of pakhuis de zwijger, host of "Trouw Duurzame 100"

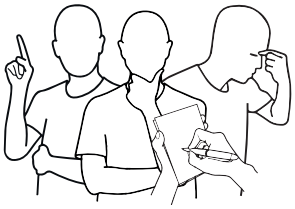
Experts perspective

Evaluation approach

The first evaluation pilot is carried out with the founder of Guerrilla Gardening on the 3th of October. Cerian (aka Jenny) van Gestel, acted as the experts in this evaluation. Rather than collecting feedback, based on reviewing the prototype and presentations, I ask the expert to engage in a ‘mini-pilot’. The reason for it to be "mini" is that the time available to do the actual real life pilot is limited. In this pilot C. van Gestel will go through the cards like a normal user without actually performing the actions. Through this pilot she will be able to get a glance at the user experience. By doing this, the discussion about the concept will not only be based on speculation but also on a small degree of experiences. After the pilot, the expert will get the full explanation accompanied with the justification behind the design choices followed by the discussion and review of the concept.

Collecting insights

The insights will mainly come from the review and semi-structured interview. During the review I will be taking notes. For this semi-structured interview a guide is prepared (appendix H) to steer the conversation towards the desired themes and subjects. Both the notes of the observation and the insights from the interview will be combined under the seven predefined criteria.



Research questions

Questions that are adressed through this evaluation:

Does the concept comply with the pre-established criteria list?
Is the concept valuable for the organization, and why?
What is the intended future use of the concept within GG?
What future developments could be applied to the design?



Figure 80.The prototype scattered over the table.



Figure 81. The expert looking through the cards

Experts evaluation result

The result of the test is divided into two categories. The first category addresses the established criteria list. Every criteria is discussed with the expert resulting in the insights below. Both the comments as well as recommendations will be explained.

The second category includes the Future of use. Together with the experts, I discussed the concept and asked how GG envision the implementation of Growing the Movement, where it can have added value and whether it is valuable for the organization and its members.

Criteria list evaluation

1. Structure

Despite the expert being familiar with the order of the cards, they are quickly scattered on the table. Although the added value of the pre-made sequence order is appreciated, the expert is skeptical that the structure of the phases will really come to fruition. She does not expect that people will strictly adhere to the order of these cards. The assumption is that the users will be too curious and look at the cards that interest them the most.

"I have my doubt that everyone will actually follow the sequence. I suspect them to just spread the cards around however they like."

- C. van Gestel, GG

2. Guidance

Provided the users follows the sequence order, C. van Gestel is confident there is adequate guidance. The steps are small enough to be to be comfortable for the user. However, not everything is followed up with the information that the expert expects. For example, the "scout je plek" card contains a tip to bring along a camera when you are exploring the neighborhood. However, there is no follow-up on what exactly can be done with those photos. The same goes for contact with the municipality. c. van Gestel thinks it will be valuable to receive follow-up information that, for example, provides an email format.

"So I have taken some pictures of plots of land that might be upgraded... and now what to do with them?"

- C. van Gestel, GG

3. Incentive

The expert believes that there is currently insufficient incentive to get users to take action. Despite the fact that the user is often invited to take action, C. van Gestel is skeptical that they will actually do so. She fears that if it is just the cards that call to action, only the citizens that are already motivated will be the ones to take action.

" “The information may stick, but will people actually do it?”

- C. van Gestel, GG

4. Personalization

The expert reflects positive on the personalization of the cards. The card sequences seemed to match the intended roles and made sense. The four roles are logical and were distinctive enough to not fall into the same category. However, the card sequences attached to the roles can deviate more. For example, the campaigner can, instead of putting seeds in the ground, make seedpacks for the neighbors.

"Luckily there are only four. Otherwise, they will end up with choice overload."

- C. van Gestel, GG

5. Level of information

After going through the cards, the expert considers that the level of information is very well adjusted for beginners. The information seems to balance on the edge of a beginner's knowledge and thus offers enough space to gain knowledge. The expert thinks the information is at a sufficient level to give the beginner a sense of competence.

" For a beginner, there is certainly a lot of new information, but what about the people who are already participating?"

- C. van Gestel, GG

Information recommendation

Despite the information being sufficient for the beginners. Cards with a higher competence level users are missing. There is an opportunity in expanding the concept to address multiple levels of competence. Advanced roles can be added to appeal to the more advanced users as well. After all, the first prototype test showed that 1/3 of the people approached were already active with biodiversity in the neighborhood. It is valuable for both the movement and the organization of GG to be able to offer these people the same as for a beginner.

6. Social contact

The expert has little to say about social contact and was confident that the community ingredients will trigger the motivated citizen to reach out to others. According to C. van Gestel, a community often arises automatically and the small community building notions of the cards are a good addition to support or even accelerate that.

" “The information may stick, but will people actually do it?”

- C. van Gestel, GG

7. Long term commitment

Similar to social contact, the expert has no commets about the sharing and caring phase. After going through the cards, she considered it to be valuable and expected it to work as intended.

"I can imagine that this structuring (of the ownership) works."

- C. van Gestel, GG

Future Use

As part of the evaluation, I asked the expert how she sees Growing the Movement being used by the Guerrilla Gardeners organization and what its value could be to the organization.

Intended use

C. van Gestel sees potential in the intended use of the concept. This means the use in the classic form, from pre-phase to the diploma.

The permanent version also seems feasible. Various grant applications were proposed by the expert in which the necessary finances were feasible.

" You could probably even link the subsidy application to art."

- C. van Gestel, GG

Structure community

The intended use of Growing the Movement has its interaction at the edge of the organization borders. After all, it tries to inform and activate people who are not familiar with biodiversity action. However, the expert also saw great potential to use it at the core of the organization. Growing the movement can be used as a way to refresh and structure the organization and the organization's community that already exists. The cards can be used in meetings to give attendees a clear sense of purpose. The roles that Growing the Movement represent provide a clear structure and the function that someone can fulfill within GG.

" it can be a useful way to add structure, especially for organizations that have just joined us."

- C. van Gestel, GG

C. van Gestel also indicates that new organizations regularly join them. According to her, the cards can ensure that all the joining organizations will adopt a shared vision and structure.

Valuable exchanges

Growing the Movement is meant to provide information and inspire action. However, the concept also has great potential to spark valuable conversations and exchanges. Both the wheel and the cards are triggers to start an open conversation. According to the expert, especially the Quartet game seems to be a helpful means of providing a group with that first bit of knowledge and subsequently creating a valuable exchange.

" Conversations can be so valuable during such a meeting."

- C. van Gestel, GG

Online toolkit

" it will become a place where communities but also just people can meet each other."

- C. van Gestel, GG

GG is currently working on an online toolkit that will function as an platform for the community. Both the toolkit and the cards have the potential to reinforce each other. Many of the cards can be digitally supported. The reflection cards, for example, can have their own forum where people can share and discussed their reflection. Allowing users to share and read the motivations of others can help to get the user inspired. The action cards can be supported with online advice and shared experiences. The community building of the cards can be expanded and be linked to the online community as well. This will increase relatedness even more. With the helpt of the toolkit, many connections can be created between the users of the cards and create a network of beginners.

The toolkit also offers the option of distributing the cards online. As a downloadable print sheet or as actual online cards. The expert eventually envisions a collaboration of Growing the Movement and the online toolkit, in which both reinforce each other.

Discussion expert evaluation

Despite the fact that a large part of the criteria list is approached positively, there are still a few that bare concern. The expert thinks that the structure does indeed provide guidance, but at the same time she is not entirely sure whether users will actually follow the sequence. This is something that will have to be tested in the user evaluation. The level of information is clearly at the right level for the target group, the unfamiliar but interested citizen. However, through the biodiversity wheel the organization also encounters the more experienced and active citizens. Right now the information on the cards is on the level of the beginner and does not provide anything for the experienced users. In future designing this can be added. Despite the level of information being good for the target group there is a concern whether the users will use this information to take action. The three themes for incentive are assumed to work, however they do have room to be strengthened.

In terms of the personalization criterion, the role sequences can be improved by making them more specified to the role they entail.

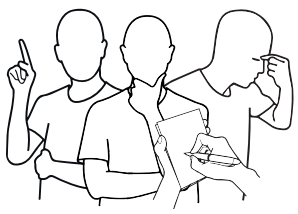
As for the future use, multiple ways of use are suggested. In addition to the intended use, the expert proposed several other options and situations where she sees the cards as a useful tool. Those propositions are mainly focused on opening conversations and causing valuable exchange. According to the expert the tool will allow existing members or collaborating organizations to get a clear picture of their function, motivation and purpose.

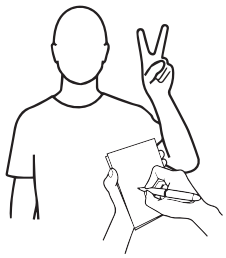
Furthermore, Guerrilla Gardeners is currently developing an online platform where members can get in touch with each other. Both the platform and the cards can reinforce each other. The concept is able to support this platform and vise versa. However, it will require further design modifications to make the link functional.

Conclusion expert evaluation

This evaluation shows that the cards almost meet the criteria set for them. Despite the fact that some adjustments are still necessary, the expert certainly sees value in the concept. In addition to the intended use, several situations have been suggested where Growing the Movement can be a valuable addition.

In this evaluation multiple assumptions have been made that should be tested with the users. For example, The expert is skeptical about the users following the sequence structure. If these assumptions are proven to be right a recommendation will have to be formed for future designing.





Citizens perspective

Evaluation approach

The evaluation is carried out by five participants from my own social bubble in between the 4th and 7th of October. All participants were unactive in the biodiversity initiative landscape at that time. To prepare the evaluation I deliver the Growing the Movement cards to the participants. To start the evaluation, I will give the participants a short introduction and I ask them to introduce themselves and their link with biodiversity. The participants will use the same online role quiz that is used for the action card iteration. Through it they will choose their role and I will give them the right card sequence. They then go through the cards and speak their mind. After this I will ask them to reflect on their experience and followed by a short semi-structured interview (see appendix I) aimed to answer the pre-defined research questions.

Collecting insights

The result will be based on observation and interview insights. The interview after the interaction will provide the opportunity to start and open conversation about their experiences. For the interviews, an interview guide is prepared (appendix I). The interviews will focus on getting information about the user as well as their real life and speculated experience with the concepts.

Research questions

Questions that are adressed through this evaluation:

Does the role match the user?

Does the concept help interested citizens understand the information needed to participate?

Does the concept help interested citizens navigate through the steps of an initiative?

Does the concept spark the feeling of motivation to act?



Figure 82. Audrey using the cards on the couch



Figure 83. Kees-Jan reading through the introduction phase

User evaluation result

In this section the insights, gathered during the test with the users, are presented. First, a short description of participants will be given in order to create an idea of the different personal perspectives of the participants. After that, an overview of the insights will be presented. Both the insights of the observation and the interviews have been clustered in groups related to the criteria. The clusters formed the basis of the first category of results which follows the established criteria list.

The second category includes the future of use. During the interview the users are asked to speculate on real life use and how they would interact with the cards if it was a real life pilot. I collected their speculations in short notes and processed them to readable text.

Five participants

In the procedure of finding participants I attempted to find a group that has a diversity in the following topics: Knowledge for biodiversity, knowledge for guerrilla gardening, age and local environment.

Daniel, 27 years old
Role: Advisor
Daniel works as a structural engineer and has a side job as a landscape gardener. He has a lot of knowledge of biodiversity and is familiar with guerrilla gardening but has never participated in it. Daniel lives in a suburb in the village of Geldrop.

Audrey, 28 years old
Role: Bomber
Audrey works in logistics. She has little knowledge of biodiversity and has never heard of guerrilla gardening. Audrey lives in the center of Rotterdam near cafés and entertainment.

Jeppe, 41 years old
Role: Organizer
Jeppe has his own business in manufacturing and has two young children. He has little knowledge of biodiversity but has heard of guerrilla gardening. Jeppe lives with his family in a suburb of Eindhoven.

Jeannine, 59 years old
Role: Bomber
Jeannine works as a doctor. She has little knowledge of biodiversity and no knowledge of guerrilla gardening. Jeannine lives in the center of Eindhoven in a neighborhood with little social cohesion.

Kees-Jan, 61 years old
Role: Organizer
Kees-Jan works as a manager. He has some knowledge of biodiversity and has done guerrilla gardening before. Especially in the form of spreading seeds around. Kees-Jan lives alone in a suburb of Eindhoven. This neighborhood is already very active in neighborhood initiatives, including biodiversity action.



Figure 84. Jeannine using the QR-code

Criteria list evaluation

1. Structure

"Ooh wait, now I see. Actually works kind of like a book."
- Audrey

The expert assumed that the cards would not be used in the correct order. However, all participants follow the structure. All participants except one immediately take the cards out of the pack and look at them from several sides. Despite the participants taking the deck out of the package none of them change the order of the cards. Some put the cards back in the package and others on a flat surface. After that they all but one follow the intended sequence structure and went through them one by one. The one that did not follow it quickly notices there is an order and stops with what she is doing to start from the beginning, following the intended way.

2. Guidance

"Ooh here are the sowing actions, in my head I had already sowed during the introduction cards"
- Kees-Jan

"I think everyone understands this." *(comment about cards)*
- Jeannine

To the question whether the cards are clear, almost all participants answer positively. All participants try scanning the first QR-code. Only two participants use all the QR-codes. The other three only use the first one. All participants let me know that the cards understandable in use and that they find the information valuable. Despite the information being clear the timing is sometimes off. For example, two participants already talk about spreading seeds around in the introduction phase of the cards. Once they got to the seed cards, they comment that they would have preferred to have this information sooner.

Despite the fact that they feel guided, there is also a clear observation that they can choose for themselves what they do or do not want to perform. One of the participants mentions that this non-committal feeling makes it attractive to carry out these actions, as it would always be their decision to do so. This can serve as evidence that the cards retain a sense of autonomy.

3. Incentive

Incentive through information

"Oooh 75% decrease in bugs population, that's really bad."
- Jeannine

The provision of information on the problem and on the impact the user can have, provoks a strong reaction from four of the five participants. The assumption that providing the users with information about the problem statement will cause motivation seems to be right. Following this up with the scout card immediately gives the participants the enthusiasm to perform this task. An Example, Jeannine straight away mentions that she wants to plant flowers that are beneficial for butterflies after reading that the butterfly population has been decreasing.

Incentive through self-reflection

The reactions toward the self-reflection cards are mixed. Three out of five participants indicate that they would not use them in a real life situation. Several reasons are given. Kees-jan has the idea that he has his thoughts and emotions in order and that he does not find it necessary to write down what he already knows. Audrey indicated that she had a very tiring day and really did not feel like delving deeper into her emotions. The participants who do show interest indicate that it depends on the underlying motives for using the cards. Jeannine says that if her intentions are in line with the self-reflection cards, she can use the cards as a tool to get a clear picture of what she actually thinks about biodiversity action. Since she has never thought of guerrilla gardening before, she thinks it might help her to get clarity. The other enthusiast of self-reflection experiences self-reflection as a way to add his personal value to the cards. Mentioning it would otherwise be very unpersonal and non-engaging.

"Ooh shit! Self-reflection... I can't handle that today. I'll skip that one."

- Audrey

“Otherwise, it's just like reading a book being pushed down your throat.”

- Jeppe

Incentive through physical nudges

Although all participants understand the value of the flags, only one of the participants indicates that he wants to use the flags. He expects that by planting the flags he can appeal to people who are clearly interested in guerrilla gardening. He expects that only the interested people will notice the flags, filtering out the people who are not. When starting a conversation through the flags he assumes he will only talk with the interested citizens. Later in the card sequence the flags request an address and telephone number. All participants react reluctantly. They do not feel comfortable writing down their address and phone number and leave it in a public space.

Despite the fact that they do not want to use the flags, they are inspired by it. For example, many participants indicate that, after seeing the compliment flag, they wanted to compliment someone in the neighborhood about their garden.

“Yeah, I like this one. You can do this anonymously and you can really stir up others with this.” *(comment about flags)*

- Kees-Jan

Incentive through planning

The sowing markers for the agenda or calendar are received with mixed feelings. In general, people in the Netherlands no longer have a tangible agenda or calendar. One of the participants says that he likes to have the markers online and put them in his digital agenda. The purpose of the markers is to address the user in their daily life with small nudges. Since many Dutch are on their mobile every day, this can still be a good option. During the test it is unfortunately not possible to check if these planning nudges have the intended result.

"I think I'd put those markers in my agenda book. I like sticking stuff like that in it."

- Audrey

"Can't you provide something of an online planning or something?"

- Daniel

4. Personalization

The participants indicate that the information they receive through their sequence fits them well. Even when the functions of the other roles are explained to them, they are still happy with the choice they made.

"Ooh wait, now I see. Actually works kind of like a book."

- Audrey

While using the cards, it is noticeable that three of the five participants adapt the actions towards their own wishes. For example, Kees-Jan sees the opportunity to network via the flags instead of flyers. He does not like flyers and decides to change that. This again demonstrates the sense of autonomy. Despite being presented with a sequence, most participants feel free to adapt it to their own wishes and goals.

5. Level of information

The participants who indicated that they had little or no knowledge of biodiversity and guerrilla gardening all give a positive answer to the question whether they learned anything new. Even Daniel, who specifies that he already knows a lot about biodiversity, indicates that he educated himself. This was mainly through the tips and tricks. However, he also indicates that he would have preferred to receive information at a somewhat deeper level. The participant who was already familiar with guerrilla action, Kees-Jan, indicates that he has not necessarily gained new knowledge. However, during the test I observed that he regularly makes comments about newly discovered information.

"Vlas plant, ooh I do not know that one yet."

- Kees-Jan

"I think everyone understands this." *(comment about cards)*

- Jeannine



Figure 85.Jeppe using the cards while chilling on the couch



Figure 86.Audrey using the cards in a orderly fashion

6. Social contact

All participants indicate that they want to combine their biodiversity action with some social contact. However, they do not necessarily want to come into contact with complete strangers. The neighborhood's existing social cohesion plays an important role in this. One of the participants has virtually no contact with her fellow residents and therefore is not eager to invite people. Not even with the cards that are specifically aimed at making new contacts. The participant who was already familiar with guerrilla gardening and who had chosen the role of organizer indicated that if he would seek personal contact, it will be with the people he already knows.

Social contact seems to be dependent on the existing level of social cohesion. When there is no social cohesion, a community will not be created easily. Some measures of cohesion will have to be present in order for this criteria to properly be established.

" After 5 years I just know the first name of my neighbors, that's it."

- Jeannine

"...but I wouldn't just randomly talk to strangers I think"

- Daniel

Real life speculation

In addition to the criteria list, I asked questions aimed at the speculation about real life situations. The following insights were found both through observation and the interview afterwards.

Use of the cards

When asked whether the participants would perform the cards in real life, the reactions are mixed. No one directly says yes. Two of the participants indicate that it depends on the intention how you start the action cards.

The current environment turns out to be an important aspect. All five participants have comments about their neighborhood and speculated about the local options of biodiversity action. The participant who lives in the center of Rotterdam indicates that she only knows a few places where she can act out on guerrilla gardening and certainly not a place that is close enough to her house. She also lives close to the entertainment center and concluded that vandalism is a barrier.

Despite the fact that the execution of the card is not answered with complete confidence, all participants indicate that they are indeed inspired to take action.

"Suppose I were to acquire them from such a machine, I would definitely do something with it."

- Audrey

"My neighborhood is already quite green."

- Daniel

Take more action?

One of the key questions of the interview is whether the participants will take more action when introduced to Growing the Movement. All participants replied with a positive answer. Although not everyone wants to follow the cards completely, getting inspiration forms the common thread of their answers. The cards are able to bring the subject of biodiversity into focus. The participants who are not familiar with guerrilla gardening indicate that the cards introduced them to something they have not thought about before. Even the gardener with prior biodiversity knowledge has never really considered the possibilities of guerrilla gardening. Four participants indicate that they will walk the street with a different view and will probably recognize biodiversity action more easily.

The participant who is already familiar with guerrilla gardening also speculate on taking more action as the cards convinced him that the barrier to taking action is not that high.

"Suppose I were to acquire them from such a machine, I would definitely do something with it."

- Audrey

"I think I'll pay more attention to it *(action taken by others)* ***now."***

- Audrey

Future recommendations

The participants who have little knowledge about biodiversity and guerrilla gardening did not mention any future recommendations . The participant who is a parttime professional gardener wants to see more information about other ways to increase biodiversity, such as insect hotels or bird houses. The participant who is familiar with guerrilla gardening suggests to make it more clear from the start that it is okay to stop whenever you want to, without feeling guilty. He mentions that he is familiar with the "battle" that must be fought against the municipality, animals and other residents in order to keep a garden alive. He wants to see a little more focus on that.

Discussion user evaluation

Due to the comments of the expert, I expected that the structure would not be completely clear, however, all participants eventually got it. As they follow the structure, there is a greater chance that they feel guided in the real life situation.

The purpose of the cards is to assist the user in taking action. However, Most participants indicated that they will not perform the actions of the cards. Instead they think they only use the cards as inspiration. This is not the intended use, but it still achieves the same goal. Therefore this subject will not be addressed for future recommendations.

Despite the participants saying that the information fit them, the more experienced participants whises for more in depth information. This is in line with comment of the expert about providing information for the more experienced citizens. Since both perspectives mention this opportunity, advanced roles are certainly something that can be addressed in future designing.

Despite the fact that social contact criteria have not yet been fully met, the cards seem to work well as a conversation starter. While going through the cards, the participants have a need to share their previous experiences and knowledge and this often leads to an interesting conversation about biodiversity.

The concept is now focused on the individual citizen but will probably also work well in group situations. Perhaps as a tool to start conversations about biodiversity. The community building aspect and the structuring of the ownership are not properly evaluated as they need a real life pilot to be carried out.

Conclusion user evaluation

This user evaluation has shown that the concept almost meets the standards of the criteria. The structure is present and is also used as it should be. Thanks to this structure, the users are clearly guided without losing their autonomy. They feel the freedom to skip certain parts and follow the structure how they see fit.

Not every incentive seems to match with all participants but with the implementation of the multiple forms of the incentives, a wide range of people can be supported to take action.

The information that the users receive seems to match well with their personal goals. In the rare cases where it does not, there is room to adjust the action in such a way that it does match.

Every participant seems to have learned something new and increased their competence.

The social contact part will need some strengthening. Almost all participants want to get in contact with other people but not with strangers. If these users live in a neighborhood where social cohesion is low, it will result in little social contact and no community building.

It is important for the users what their environment is and what their intentions are to choose whether they will actually use the cards.

In the speculation as to whether they will use the cards, it is generally stated that they will not use the cards completely but will mainly use them for inspiration.

All in all, the concept seems to work well. However, there are always room for improvements. At the end of this evaluation chapter, the future recommendations will be further explained.

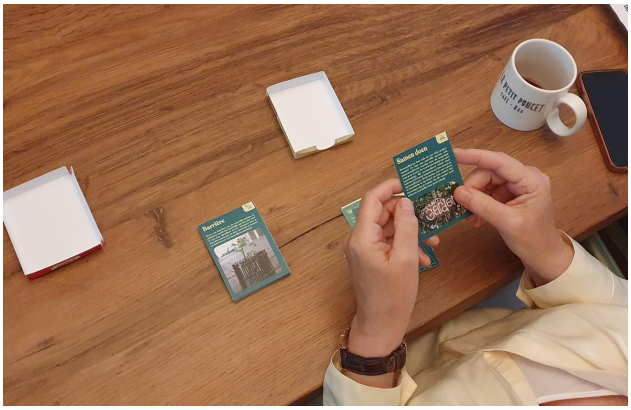


Figure 87. Jeannine almost at the end of the card sequence

Reallife example

Evaluation approach

On October 6, the “Trouw Duurzame 100” took place in Pakhuis de Zwyger in Amsterdam. This is a program in which sustainable citizen movements are given a space to express themselves. It revolves around ordinary citizens who make an effort to make the Netherlands more sustainable. During this program, several bottom-up initiatives are given the opportunity to share their stories and inspire others.

During this evening guerrilla gardening manned a stand on the sustainability expo and informed visitors how to create temporary gardens in built-up areas, also known as guerrilla gardening. The aim is to inform and activate ordinary citizens to take biodiversity action themselves and transform their local urban environment into a more environmentally friendly and biodiverse version of itself. This evening provides the opportunity to exhibit Growing the movement and test the prototype in a real life situation.

Collecting insights

Rather than collecting feedback based on reviewing the prototype, and interviews the focus lay on observing. By doing this, spontanious and real situations can be experienced and analyzed. I will collect my observations through images and notes. After the sustainability fair these observations will be analyzed resulting in the textual explanations of the observations. To aid the observation, I will place flyers that visitors can take with them instead of the prototypes. This way I can see if there is any interest in taking the cards home.

Research questions

Questions that are adressed through this evaluation:

Does the biodiversity wheel attract interested citizens to interact?

Is their interest in acquiring the biodiversity action cards?

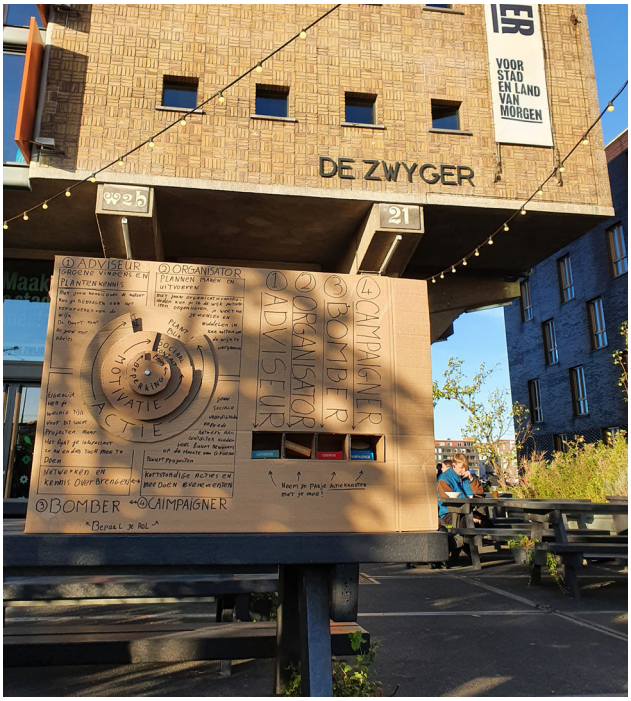


Figure 88.The prototype in front of Pakhuis de Zwyger



Figure 89.Guerrilla Gardeners booth set-up

The visitors

The visitors who came to the fair were surprisingly diverse. The age ranges approximately from 18 to 70 years old. There are, for example, students from avans university but also older couples who are retired. Based on short conversations with the visitors, I learned that the majority have a link with biodiversity through hobby or work, are higher educated and belong to the middle class of the Dutch society. I have not kept track of how many visitors eventually came into contact with Growing the Movement, but I estimate this to be about 40 people.

Real life evaluation result

This evening offers the opportunity to interact with many citizens. There seems to be a lot of interest and many people want to interact with the biodiversity wheel. However, the contact in such a exposition remains rather superficial and a full conversation for insights are difficult to get. The insights below are therefore mostly based on observation and will not be compared with the criteria or future use.

Interaction clear

The visitors generally do not realize that they can interact with the wheel themselves. However, after a short explanation they gladly do. Verbal explanation is therefore still necessary before people realize what the intention is. The wheel can make a good improvement if an explanation is given by means of text or images, making a verbal explanation obsolete.

The cards, however, are clear. Visitors often pick them up and flip through the them.

Attention seeker

The biodiversity wheel attracts the attention. Visitors often come to the stand to have a look at the biodiversity wheel. They examine it first before starting a conversation. Many visitors start the conversation because they want to know what it is. The visitors see that it is a utility object, but do not have a clear idea of what it exactly entails. The assumption is that the mystery of the wheel triggers people to interact.



Figure 90.Couple turning the wheel



Figure 91. Students from avans trying to find their role

Interest

Since the cards are still a prototype, they can not be handed out. Instead, flyers are placed in front of the prototype with a short explanation of what a role entails and what one can do to fulfill the role. These flyers are laid out to test whether people are interested. There is clearly a sign of interest as the people often take the flyers with them. Several people inquire if they can use the concept for their own organization or municipality.



Figure 92. Visitors scrolling through the cards



Figure 93. Visitors taking pictures of the biodiversity action cards



Figure 94. Visitors taking pictures of the biodiversity action cards



Figure 95. Pakhuis de Zwijger employee looking through the cards

Conclusion real life situation

Despite the fact that no interviews could be conducted, I was able to draw the following conclusions from the observations. The biodiversity wheel attracts a lot of attention. People don't know what it is but are curious about it. On the one hand, this is a plus as it makes people come check it out, but on the other hand, the mystery also ensures that people do not fully understand it. People often need an explanation. There is room for improvement on the clarity of the wheel. The people who eventually understood the concept showed a lot of interest. Both ordinary citizens and other organizations clearly wanted to use the concept for real. From this I conclude that the concept can add value to the biodiversity initiative landscape.



Figure 96.Visitor trying to find her role

Chapter 6
Final conclusion

Project goal

In this project the citizen participation landscape was explored through research, interviews and developing and testing of iterative prototypes. Findings showed that citizens generally do not know what the possibilities are and therefore do not express themselves in the form of initiatives. Growing the Movement can empower these citizens and support them to engage in bottom-up biodiversity action. The concept promises to provide citizens with an accessible and playful way to do something with their local environment and engage with the people around them. Through the concept, citizens are gradually introduced to participation. As it can be distributed by both the citizens themselves as the municipality I believe that Growing the Movement poses a valuable contribution to bottom-up citizen participation as a whole and can truly grow the movement.

Potential of Growing the Movement

Both the evaluation and the insights from the iterative design sprint showed the potential of spreading knowledge, motivate people to act. The expert of the biodiversity organization saw multiple situations where the concept would be a valuable contribution. It allows them to actively reach out to interested citizens and introduce them to the possibilities of biodiversity action. The citizens were positive about the concept as it inspired them to be more involved in biodiversity in the neighborhood. The cards made them actively think about their own contribution and made them aware of the impact they can have.

As the concept reaches out to citizens who are not active in participatory city making it also makes for a valuable participation tool to be used by municipalities.

Growing the Movement is beneficial for multiple stakeholders of the biodiversity initiative landscape and can truly support the growing of the bottom-up initiative movement.

Limitation of the Growing the Movement

These benefits are accompanied by practical challenges. There is still room for improvement on multiple themes. For example, the concept does not yet reach a diverse audience. Furthermore, it's still unknown if the cards engage citizens community wise and if the citizens would maintain effort in the long run. There are several recommendations that can still optimize the final concept. The design has room to be further optimized in future design effort.

Discussion & Recommendation

Biassed pilot

Growing the Movement was tested in two neighborhoods of Eindhoven and by members of my own social bubble. Eindhoven is a city with already high standards on participation and active neighborhoods. Although the concept tests did reach citizens that are not active yet, it still raises the question if the concept would also work in a totally different municipality, in terms of population, size and participation engagement.

Long term goals

The project is about introducing citizens to participation, giving them information and having them create durable biodiverse initiatives. Going through all the cycles of the concept, however, takes a lot of time. More time than available for the evaluation phase of this project. There is a possibility that citizens grow bored of the cards or their continious effort fades over time. From a hypothetical point of view it can be concluded that the concept will work, but this can only be said with certainty if actual real life pilots can be carried out over a longer period of time.

Inclusivity

Despite inclusivity being one of the first discovered challenges for participation, inclusivity is still a point for improvement within this concept. Firstly, the concept is mostly textual and in the Dutch language which in itself already excludes all the non-dutch speakers in the Netherlands. The implementation of Growing the Movement in other languages can be a possiblity to improve its inclusiveness. Secondly, the users are not specifically addressed in all distribution option. As a result, the people come into contact with the concept when they are personally attracted to it and are comfortable with the interaction. This might result in again only reaching a certain social group who are already active.

Multipurpose

The cards are now focused on activating citizens to increase biodiversity. However, the content of the concept can also be adapted to address other branches of bottom-up initiatives. For example, there can be a card set that addresses climate change, waste processing or the energy transition.

Design recommendation

Based on the evaluations, the following changes to the concept are suggested for future design.



Wheel explained

The wheel could have a more clear description of the function. Resulting that verbal explanation is unnecessary and the user acts on his own.

Expert roles

More roles can be added that can also support the more experienced citizens.

Specify the roles

The sequences can be specified even more towards the role they represent.

Online platform

Adding a Link with an online platform could greatly enhance the concept. It provides a space to share experiences and support each other while using the cards.



Incentive

Currently, the users say they mainly use the concept as inspiration. So there is still room to increase the incentive criterion.



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Illustrations

All hand and human Illustrations are by the illustrations of stickfigure artist G. Leremy.
Some Illustrations have been alltered by me to fit the project.

Appendix

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Appendix A

Interview actors of participation landscape

Semi structured interviews

These frameworks helped to structure the interviews and generate valuable insights. All the interviews are held in dutch.

Interview citizen and organization

Introductie

Zou je jezelf eens willen omschrijven in relatie tot initiativen in de stad?
Zou je willen omschrijven wat je initiatief inhoud?

Doel en Motivatie.

Wat was het doel van het initiatief?
Waarom heb je dit initiatief ondernomen?

Collaborations and participation practices.

Hoe is de samenwerking ontstaan?
Hoe ben je in contact gekomen met de mensen waarmee je samenwerkte?
Moesten er ontwerpen gemaakt worden? Zo ja, Hoe ging dit?

Organisatie en structuur van het initiatief

Waren er andere stakeholders betrokken en hoe was het contact met deze stakeholders?
Hoe was het contact specifiek met de overheid of gemeente?
Hoe zit het betreft vertrouwen naar de overheid of gemeente?

Main challenges

Vertel me eens over wat uitdagingen die naar boven zijn gekomen?

Problems and resistance

Voelde je ergens op een moment in het process weerstand van de betrokken mensen?
Andere problemen die ontstaan zijn?

Interview civil servants

Introductie

Zou je jezelf eens willen omschrijven in relatie tot initiativen in de stad?
Zou je willen omschrijven wat je functie bij de gemeente inhoud?

Doel en Motivatie.

Hoe verloopt een initiatief meestal of is het altijd compleet anders?
Wat is jouw of de gemeente's motivatie om initiatieven te willen überhaupt?

Collaborations and participation practices.

Hoe gelijk zijn samenwerkingen tussen gemeenten en inwoners?
hoe zoekt de gemeente contact met inwoners?
Moesten er ontwerpen gemaakt worden in samewerking met inwoners? Zo ja, Hoe ging dit?

Organisatie en structuur van het initiatief

Is er een bepaald framework dat helpt met het behandelen van initiatieven?
Hoe was het contact specifiek met de Initiatiefnemers?
Botst het intern wel eens op over initiatieven van bewoners?

Main challenges

Wat zijn wat uitdagingen die regelmatig naar boven komen?
Wat zijn wat onderdelen waar echt verbetering in moet komen?

Problems and resistance

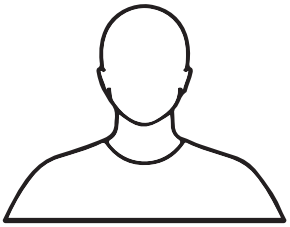
Komt het vaak voor dat er weerstand wordt geboden richting de gemeente?
Andere problemen die ontstaan in participatory city making of initiatieven?
Hoe vaak worden er initiatieven geopperd maar niet uitgevoerd en wat voor gevolgen heeft dit?

Appendix A

Interview actors of participation landscape

Notes and interesting quotes were taken by me during the interview. After the interview, I reviewed the notes and the most important insights were written down. After I concluded all interviews the main findings of all interviews were noted down in insight cards. All interviews were held in between the 9th the 20th of May.

Citizen perspective #1



Frits Jonkers
Male, +/- 70 years old, citizen
CPO project participant

Frits has worked in welfare. He has done many projects on Poverty, Loneliness, similar social projects. He has been a consultant for a long time but also worked for the municipality.

Frits is now part of a collective private commissioning (CPO) citizen initiative. This means starting a housing project together with other citizens on a vacant lot. They did this in collaboration with BIEB. A professional company that is familiar with the CPO process. They rendered services like finding architects, lawful advices, meetings.

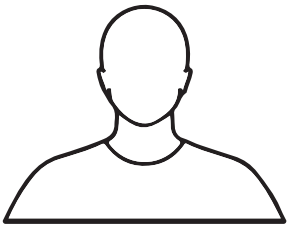
Main insights interview

Collaboration on an equal footing is important.	Objection is very powerful and can be dangerous to the success of citizens' initiatives.	A citizens' initiative where some people claim to much ownership of the project can be bad for the project.
Word of mouth communication quickly attracts participants from the same social circles and social classes.	The government/ municipality has little faith in residents' initiative and often looks down on them.	Civil servants who are enthusiastic about participation have resistance from higher up.

Appendix A

Interview actors of participation landscape

Citizen perspective #2



Erik "Pluktuin" (Did not want to include last name)
Male, +/- 50 years old, citizen
Beginning initiator

Erik, along with three other citizens, wanted to create a neighborhood park. The idea was to take ownership of a nearby site and to build their own park. The site was very large and the municipality did not trust them. They didn't know Erik and the others. Instead, Erik and the others have applied for a piece of parking lot that is connected to the site. Here they wanted to create a neighborhood garden called the "Pluktuin".

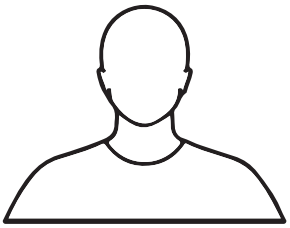
Main insights interview

- As initiator you have to gain trust with the municipality by starting small.
- Erik had succes with the municipality because an interested official happened to be present. This was not always the case.
- During contact with the municipality the initiato has to stand their ground and be sure of their plan, otherwise there is a high chance of failure.
- Erik experienced friction in the group due to clashing ideas.
- Getting volunteers was initially difficult despite the effort that was put into it.
- Random encounters between one-time volunteers assured that they stayed.
- Hosting events creates bonding and therefore involvement.
- Volunteers prefer to participate for a short time without obligations.

Appendix A

Interview actors of participation landscape

Citizen perspective #3



Tom van Duuren
Male, +/- 50 years old, citizen
Initiative member

Tom has a temporary house that is transportable. He currently lives in the middle of a new neighborhood. Tom has the ideal that everything should belong to everyone. That is why children from the neighborhood can regularly be found in his garden. Despite the fact that he himself indicates that it is not his garden, he clearly has ownership over the garden. For example, he has decided not to allow a certain group of children in the garden. He also takes ownership on the main path of the district. He says that it is his neighborhood and therefore has something to say about it.

Main insights interview

Ownership is important once you have implemented an initiative.

You just have to be lucky to get the right enthusiastic civil servant.

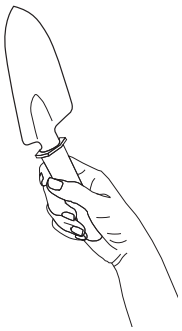
People who want to help or want to work together often come naturally.

Objections are very powerful and often unfair.

Appendix A

Interview actors of participation landscape

Organization perspective #1



Jenny van Gestel, founder of "Guerrilla Gardening"
Female, +/- 40 years old, citizen

Jenny mainly worked for non-profit organizations to “make the world a better place”. Jenny has already been commissioned by GroenLinks to get people to do more biodiversity action. Her campaign was mainly about seedbombs. These are small packages that you can be thrown on dry ground from which plants then grow. People contacted her to see if she also sold seedbomb kits. This gave her the idea to start Guerrilla Gardeners.

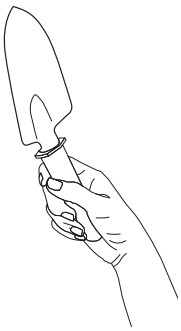
Main insights interview

The biggest problems arrise when the views of other residents are not aligned.	Other associations offer help and a platform to grow.	Campaigning aimed at feeling is important for reaching people.
If people can see the impact they have more interest to participate.	The organization gets more attention when participants get something in return.	It is important to create a foundation for the contact with municipalities.

Appendix A

Interview actors of participation landscape

Organization perspective #2



Kees Lepoeter, founder of "Adopteer een straat"
Male, +/- 50 years old, citizen

Kees was fed up with the mess in his neighborhood and then took action. Slowly but surely he has involved other people in this and has also entered into communication with the municipality. He has been expanding his organization for eight years now.

Main insights interview

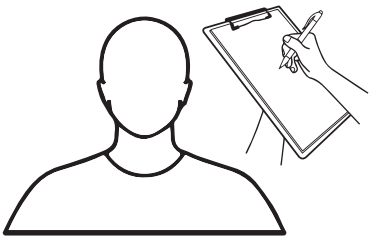
It is important to make small and gradual changes. This makes it easier for people to join, also for the municipality.	A shared vision is very important	It is hard to find volunteers for long term but easy to find for short term.
kees involves other parties. Like schools or other initiatives.	Branding and marketing can really help grow the initiative	Marketing is part of initiatives
Easy accessibility is key. A lot of obligation scares people off and results in less personal motivation	Municipality is still conservative. They still have no trust in bigger scale projects	Watch out for standard channels and there ways of being stuck. It might only reach the same people over and over.

Lepoeter suggests a succesful initiative should have:	as little as possible	As much as possible
	Bureaucracy **Talking and meeting** **Municipality** **Obligations**	**Accesibility** **Doing** **Intrinsic motivation**

Appendix A

Interview actors of participation landscape

Civil servant perspective #1



Henri Koolen
Male, +/- 50 years old, civil servant

Henri Koolen is area manager Woensel Noord and Strijp at the Municipality of Eindhoven. Henri is interested in citizen participation and is very pleased with the "Buurtbudget" and "Adopteer een straat" initiatives.
Henri has regularly collaborated with initiatives and had a lot of experiences to share.

Main insights interview

Eindhoven has only recently started to really develop in participation.

As soon as residents are given more room to initiate themselves, the relationship among each other changes negatively.

With flyers you only reach the people who are already interested.

Municipality's higher ups often only see the bad cases. This forms a distorted image.

Ownership sometimes gets out of hand and citizens claim too much.

Professionals are regularly needed in initiatives. These professionals sometimes want to take over the project too much, causing initiators to lose their motivation.

The collaboration often does not go as equals. The government sets standards

Every initiative is almost completely customised.

Municipality behind a project gives initiators a boost in reliability and credibility.

Each neighborhood has its own profile and stereotype in the municipality.

It is a new development that officials more often go to the people and sit around a table. In this way there is direct contact between both parties and a much better cooperation.

People are often only interested when actual changes take place.

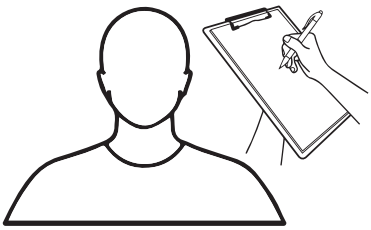
Municipality encourages individual small-scale initiative without permission.

Transparency towards citizens is an issue

Appendix A

Interview actors of participation landscape

Civil servant perspective #2



Rob Woltinge
Male, +/- 40 years old, civil servant

Rob Woltinge is specialist area-oriented worker at the municipality of Eindhoven. initiator of the conversation with the municipality. We discussed my project together with his colleague for citizen and government participation (woman, +/- 30 years, civil servant) and a social designer (woman, +/- 30 years, civil servant) working at the municipality of Eindhoven.
(Names deliberately not added)

Main insights meeting

This group discussion was mainly about the approach to the project and how the municipality can support it. The meeting did not produce any new insights but did confirm some of the things H. Koolen has mention. For example: "The collaboration often does not go as equals. The government sets standards." Based on this meeting, I chose not to collaborate with the municipality of Eindhoven. This choice arose from the fact that I want to the project to support bottom-up initiatives. I will be mainly acting with the citizens perspective.

Appendix A

Interview actors of participation landscape

Clustered insights interviews

To summarize the insights and findings that I got from the interviews, I made insight cards and clustered them. These insights were used to formulate the obstacles during the discovery phase.

Cluster: Municipality communication obstacle

Initiators take a claim
Sometimes Initial initiators tend to claim the initiative as there own once given to much power by municipality

Trust towards citizens
Municipalities have low trust towards citizens initiatives.

Change sparks interest
People are often only interested when actual change takes place.

Municipality needs foundations
In order to receive subsidies and support, there must be a foundation. Legally impossible to support one person.

Municipality and citizen are not equal
The collaboration often does not go as equals. The government sets standards

Municipality has to be transparant
Transparency about expectations, Budget and possibilities is crucial to avoid disappointed citizens and motivation in future processes.

Initiators to much power
Initiators get the power to make decisions. Often without consideration of wishes and ideals of other residents.

Framework
Initiatives are fluid processes that are self-organized and do not follow fixed patterns.This assures that municipality have no real framework

Objection to much power
The municipality must comply with these objections and can sometimes result in the termination or delay of a residents' initiative.

Reliable and credible
Municipality behind a project gives initiators a boost in reliability and credibility

Combi Municipality and citizens initiative
A combination of self-organization and government support is best to create durable initiatives.

Success is civil servant specific
A combination of self-organization and government support is best to create durable initiatives.

Appendix A

Interview actors of participation landscape

Clustered insights interviews

Cluster: Constraints and Barriers

Barrier: Fear of inexperience
For citizens who want to participate but haven't done this before it can be more difficult to participate if they have the feeling that everybody around the table is already very experienced.

Barrier: Fear of losing freedom
A lot of obligation scares people off and results in less personal motivation

Constraints: Not enough time
People want to participate but don' t have the time

Constraints: Money
People want to participate but don' t want to spent money on it.

Constraints: Physical
People want to participate but don' t think they can physically

Cluster: Inactive citizens obstacle

Citizens are unaware of possibilities
Many citizens don't know about the possibilities of participation.

Initiator social group
Initiators generally fall in same social group

Initiative mostly not inclusive
Group of initiators often not representative of the entire neighborhood or district.

Acquiring volunteers is hard
Getting volunteers was initially difficult despite the effort that was put in.

Keeping volunteers is hard
Keeping volunteers for long term commitment is hard

Appendix A

Interview actors of participation landscape

Clustered insights interviews

Cluster: Long term commitment obstacle

Feeling of obligation is demotivator
People should act from their own freedom. Obligations work as demotivator

Intrinsic motivation wanted
Extrinsic motivation works only for short term action and will not last. It also affects the intrinsic motivation negatively

Citizens have various motivation
Citizens have various motivations to join or start an initiative

Learning is a motivator
Contribute to competence is an important motivator

Cluster: Communication initiators/ residents

Shared vision is important
Problems can arise, If not everyone in an action or initiative shares the same vision.

Informing outsiders is important
This can prevent objections by other residents

Lack of information distribution
There is a lack of information distribution of initiatives towards non participating citizens.

Reaching interested citizens is easy
Can be done through through standard channels. (flyering, local paper, enz)

Professionals take over
Professionals are regularly needed in initiatives. These professionals sometimes want to take over the project too much, causing initiators to lose their motivation.

Conflicting ideas
When choices have to be made but not everyone can agree. Initiatives are not always familiar with the options.

Appendix B

Timeline creation

Interview Timeline

The questions below were used to start the interview and to structure the conversation to some extent. During the interview, I simultaneously worked on forming a timeline with the help of Miro. I prepaired a timeline framework in miro for smooth working capabilities. By steering the interview through the experiences of the organisations from beginning to end a clear timeline could be formed. The created timelines are visible on the next page. The three timelines were then combined in a general timeline.

Prepaired questions

Introductie

Would you like to give me a little introduction about yourself?
What is your connection to biodiversity?
Would you like to give me a little introduction about your organization?

Begin

How did you ever get the idea to start an initiative?
Were you alone or in a group?
Did you immediately start developing your idea?
Was the municipality involved in this?
What was one of the bigger challenges in this initial phase?

Mid

When and why did you turn into an organization?
How did you ever get in touch with the first people who wanted to join?
Was there good cooperation between you and the others?
Was there good cooperation between you and municipality?
How did you handle the growth of your initiative?

End

How do you ensure that people have long-term commitment?
Looking back on your initiative, what would you have done differently?

Various

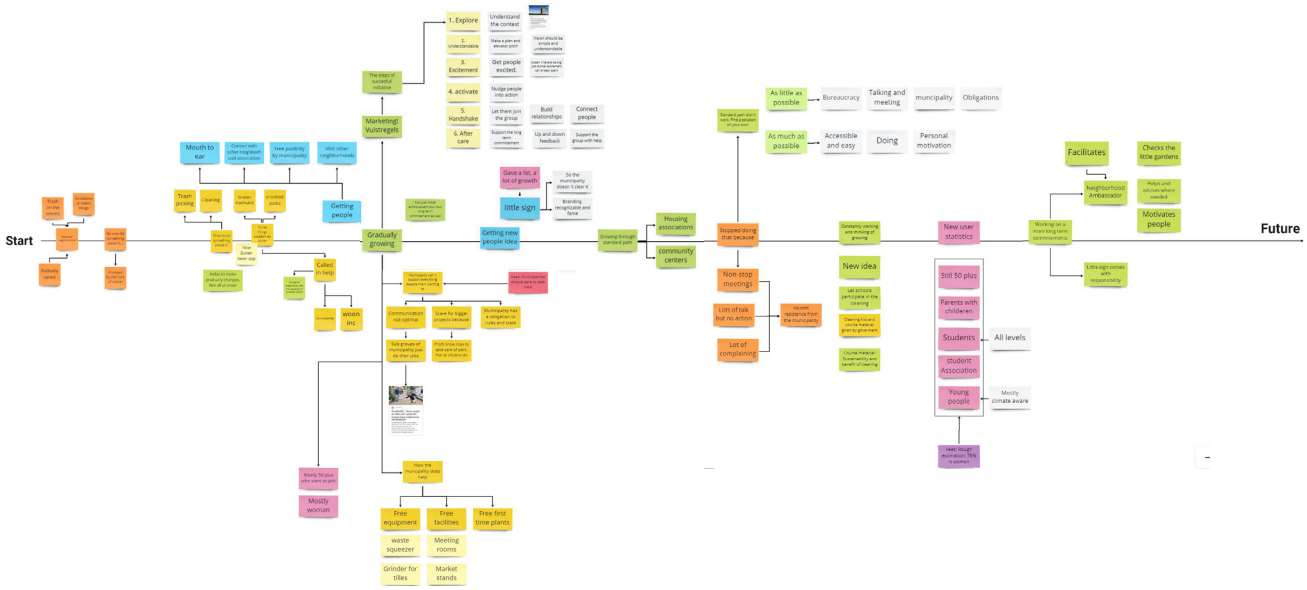
What advice do you have for new initiators?

Appendix B

Timeline creation

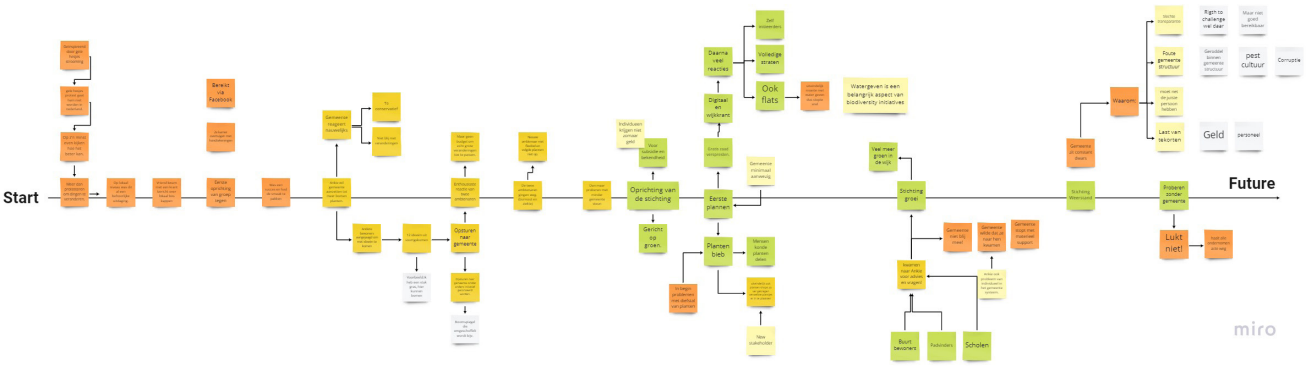
Timeline "Adopteer een straat"

The "Adopteer een straat" timeline was created in an interview with Kees Lepoeter, the founder of "Adopteer een straat". The interview was online and took place on May 19th, 2022.



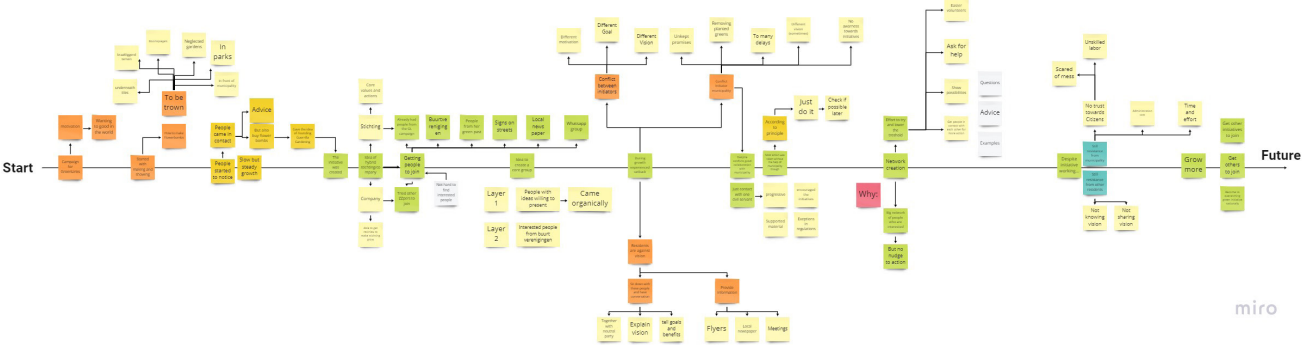
Timeline "Stichting is Working"

The "Stichting is working" timeline was created in an interview with Ankie Withagen, the founder of "Stichting is working". The interview was online and took place on June 8th, 2022.



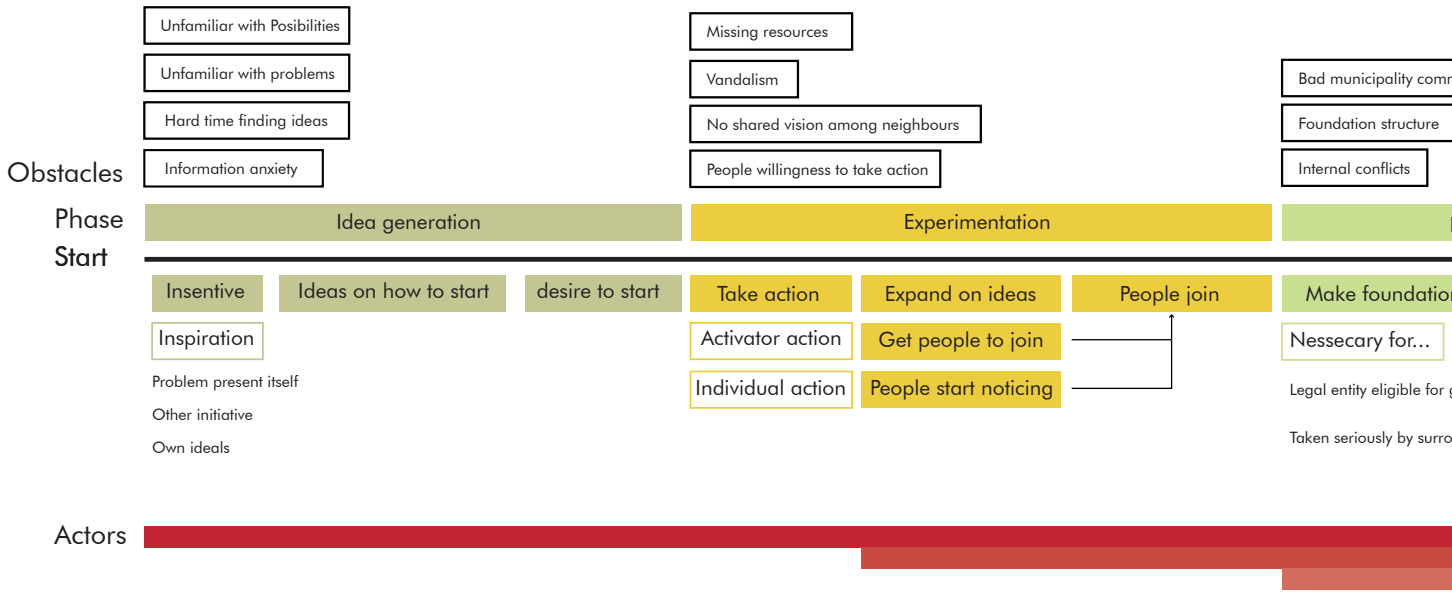
Timeline "Guerrilla Gardeners"

The "Guerrilla Gardeners" timeline was created in an interview with Cerian van Gestel, the founder of "Guerrilla Gardeners". The interview was online and took place on May 13th, 2022.



Appendix B

Timeline creation



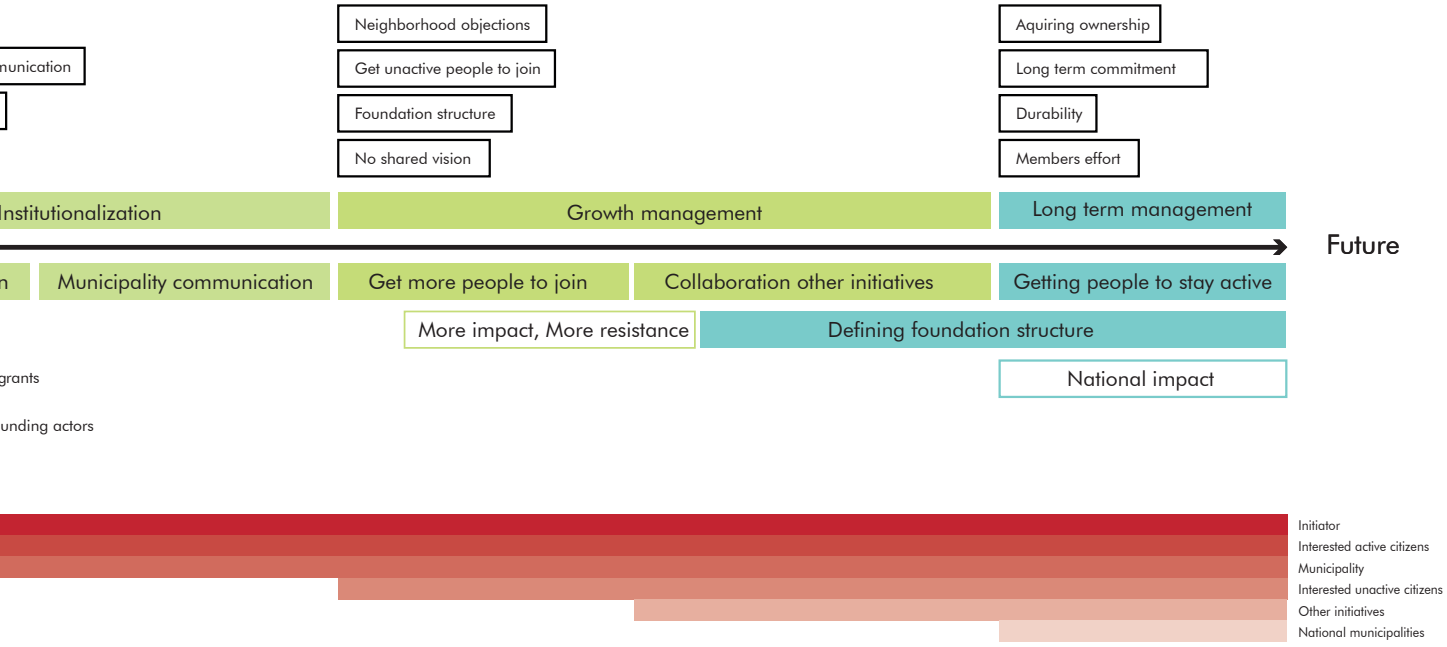
Timeline result

The different findings of the three organizational timelines have been merged into one timeline. Five phases have been distinguished in which the similar situations take place.

The first phase is idea generation. This is where the citizen comes up with the idea to carry out an initiative
The second phase is experimentation. The citizen brings the plans into reality and experiments with taking actions
The third stage is institutionalization. In this phase , the initiator chooses to start a foundation to have better contact with the municipality or to create a structure for the group of people who want to participate. This is the phase where an initiative transforms into an organization.
The fourth phase is growth management. The organization wants to grow and takes the time to do so in this phase.
The fifth phase is long-term commitment. The growing organization will become durable with members who have long term commitment.

All phases are described with the obstacles they encounter.

The involved stakeholders are indicated at the bottom of the timeline in red. On the basis of notes during the interview, I kept track of which stakeholder is involved in an initiative or organisation.


munication
Neighborhood objections
Get unactive people to join
Foundation structure
No shared vision
Aquiring ownership
Long term commitment
Durability
Members effort
Institutionalization
Growth management
Long term management
Future
n
Municipality communication
Get more people to join
Collaboration other initiatives
Getting people to stay active
More impact, More resistance
Defining foundation structure
grants
National impact
unding actors

Initiator
Interested active citizens
Municipality
Interested unactive citizens
Other initiatives
National municipalities

Appendix C

Prototype test biodiversity wheel

Test procedure biodiversity wheel

The prototype was tested in the Irisbuurt in Eindhoven with citizens that went to the supermarket. On Monday afternoon 4 July, I placed the prototype in front of a supermarket. While standing close to the prototype I asked people if they wanted to do a small experiment.

Test

The test consisted of three parts and takes about 10 minutes.

Part 1 introduction

First I gave a brief explanation about the thesis followed by the question whether the citizens want to participate in a small experiment. Then I asked them to talk about if and how they are involved with biodiversity in their neighborhood or environment.

Part 2 interact

After the introduction I invited the participants to interact with the prototype. In the meantime, I observed them and note down insights about the interaction. During the interaction I asked questions to help them speak their mind.

Part 3 interview

After the interaction, when they have found a role, I started an open conversation with prepared questions about their motivation, inspiration and what they did or did not find interesting about their experience.

Result

Fifteen citizens were approached. Five where not interested to interact at all, five where interested in the interaction but were already contributing to biodiversity action in their neighborhood and another five where interested in the interaction and never did biodiversity action before. These citizens formed the participants of this test. Two citizens were living in the Irisbuurt neighborhood, two lived in the Rochusbuurt and one lived in Geldrop. Two of the citizens mentioned that they were already quite satisfied with the amount of green in the neighborhood but nevertheless wanted to make it even greener.

After explaining the wheel all of the five participants started the interaction. At first you could see that there was a bit hesitation and excitement. However after getting the hang of it they started turning the wheels to explore all the options. Four of the five participants were very focused on the wheel and did not speak their mind that often. I asked for example question about why they made certain choices and if the options where clear. One of the participants spoke her mind very clearly and guided me through her interaction.

The interaction was not always smooth sailing. Two of the participants started by reading all roles before actually turning the wheels. It took them some time to notice that the wheels had arrows that pointed to the roles.

When the participants made their choice of the role according to the layers, I asked them if this role fits them. Four of the five participants agreed. The one that didn't found multiple roles interesting.

Appendix C

Prototype test biodiversity wheel

When the participants choice the role they read the function of the role. After reading however they did not necessarily know what to do next. When I asked them if they wanted to call the number they were often hesitant. Two participants did actually safe the number but then never called or messaged it.

After the interaction three participants seemed inspired as they asked me where they could find more information to actually perform some biodiversity action. This was something I didn't prepare for and told them to make notes about some keywords they could google.

The open conversation after the interaction resulted in a wide ranch of comments and where different per person. These insights have been mapped in Miro. They are written in Dutch as these where my own notes however the insights that are taken away from this are processed in English.

Results per participant

The processing of the data per participant is done according to a framework. Black provides the information about the person themself. Green indicates which layers they selected and which role was chosen.

In red is what they indicated in the introduction part of the test and in yellow the notes of the open conversation afterwards are noted. Furthermore, many notes were made during the whole process of the test. These are provided in light green for humans and light blue for the prototype. Interesting quotes are indicated in light gray.

Participant #1



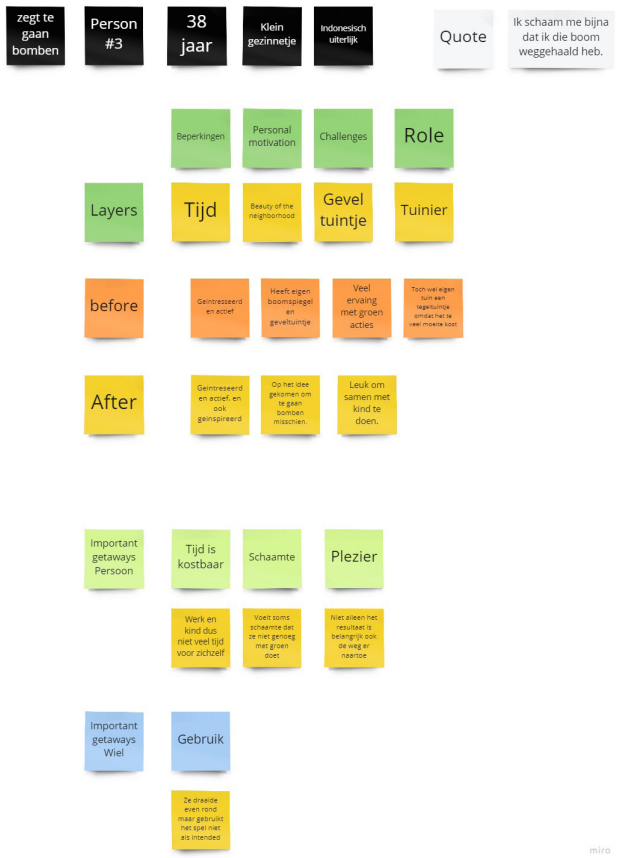
Participant #2



Appendix C

Prototype test biodiversity wheel

Participant #3



Participant #4



Participant #5



Appendix C

Prototype test biodiversity wheel

Cluster results

The important getaways from the interaction with the participant resulted in the follow clusters: design cluster, people cluster and critic cluster.

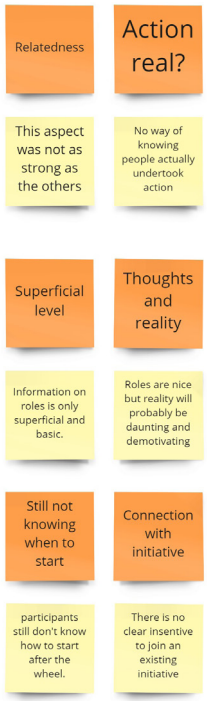
Design cluster



People cluster



Critic cluster



Cluster conclusion

Evaluating the prototype testing gave the insight that citizens are not aware of the possibilities of biodiversity action. The roles helped to give information to the participants but when the role was chosen they still did not know what to do with it. The participants want a greener neighborhood but never acted out on it and after know their personal role they probably will not start now. Furthermore the information is to superficial to have enough knowledge from the wheel alone. Searching for the information they need, later on at home, will probably be daunting.

Appendix D

Prototype test Quartet game

Consent form and opening statement survey

The opening statement used for surveys.

Hallo! Leuk dat je aan het testje van actie kaarten mee wilt doen. Door jouw bijdragen kan ik het ontwerp weer verbeteren en optimaliseren. Super bedankt voor je medewerking.

Door te starten met de enquête stemt u in met deze “opening statement” en met het feit dat ik de data die hier uit voortkomt mag verwerken in mijn afstudeerproject.
Opening statement

Dit experiment is deel van een industrial design masters onderzoek genaamd “Journey through citizen initiative landscape”. Dit onderzoek wordt uitgevoerd door Tijmen van Haelst van de TU Delft in samenwerking met Guerrilla Gardeners.

Het doel van dit onderzoek is om de effecten van een prototype te evalueren. De data zal gebruikt worden voor mijn afstudeerproject en eindverslag. U wordt gevraagd om de enquête in te vullen en de actie kaarten te testen.

Zoals bij elke online activiteit is het risico van een databreuk aanwezig. Ik doe mijn best om uw antwoorden vertrouwelijk te houden. Ik minimaliseren de risico’s door de data geanonimiseerd op te slaan. De opslag zal alleen, offline, op mijn eigen pc plaatsvinden en wordt niet verder verstrekt aan anderen. Ik ben de enige die bij deze data kan.

Uw deelname aan dit onderzoek is volledig vrijwillig, en u kunt zich elk moment terugtrekken zonder reden op te geven. U bent vrij om vragen niet te beantwoorden.

Contact gegeven:
Tijmen van Haelst
+31657028146
t.t.vanhaelst@student.tudelft.nl

Online opening statement: https://docs.google.com/document/d/1-cfna0wDXQq7tHqLDk9AYs6mvuyF-HLNJxYtkgB7AHDk/edit?usp=sharing

Appendix D

Prototype test Quartet game

Test procedure quartet game

The prototype of the Quartet game was tested by two different parties: myself and Jenny from Guerrilla Gardeners. I took two test, one on Saturday evening the 13th of August and one on Sunday afternoon the 14th of August. Jenny didn't have the time until a month later and took the test on the 22nd of September. The participants for my test are my friends on Saturday evening and my colleagues at work on Sunday afternoon. Jenny did her test with interns on the 22th of September.

The test that Jenny performed came at a time when I already moved on to the next design sprint. As a result, it was decided not to process her test. The insights would no longer have any effect on the iterative design sprint anyway. However, I did check whether anything special had been observed during her test. This turned out not to be the case. The outcome was very similar to the tests I did.

Test

The test consists of three parts and takes about 10 minutes.

Part 1 Introduction

First I give a brief explanation of the project and the test. This followed up by the question whether the participants are interested in playing the game and participate in my test.

Part 2 Interact

I unpack the cards, shuffle them and deal them out to my participants. I let them play the game while I try to intervene as less as possible. While they play I observe them and write down any interesting observation.

Part 3 Survey

After playing the game I ask the participants to fill in an online survey. I send them the link through WhatsApp and wait for them to fill it in. If they have any questions I am there to answer them. Before they start answering the questions they are welcomed by the consent form on the previous page. The survey consists of three main themes.

1. Prior knowledge: The participants have to rate themselves in guerrilla gardening knowledge on a linear scale.
Survey question:
How much knowledge do you already have about guerrilla gardening? (scale answer)

2. Knowledge gain: Questions are asked about if they acquired a more clear image of guerrilla gardening and learned something new.
Survey questions:
After playing the game, do you feel like you have a clearer picture of guerrilla gardening? (Yes/No)
Did the game teach you something you didn't know before?(Yes/No)

3. Inspiration and action: The participants are asked about being inspired and being led to action.
Survey questions:
Are you more inclined to take green action yourself after playing? (Yes/Maybe/No)
Is there a part of the game that inspired you to do it? (e.g. a garden in a shoe) (Yes/No)

Appendix D

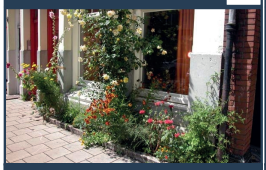
Prototype test Quartet game

Quartet cards prototype

Location category

GEVELTUIN — LOCATIES

BLOEMBAKKEN
BOOMSPIEGEL
MIDDENBERM



EEN GEVELTUINTJE IS EEN SMALLE TUIN LANGS DE VOOR- OF ZIJGEVEL VAN JE HUIS (AAN DE STRAATKANT). VOLLEDIG LEGAAL IN VEEL GEMEENTES.

BLOEMBAKKEN — LOCATIES

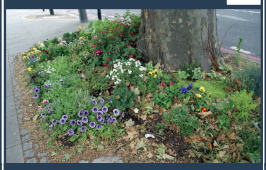
GEVELTUIN
BOOMSPIEGEL
MIDDENBERM



BLOEMBAKKEN KUN JE MAKKELIJK OVERAL NEERZETTEN OF ZELFS ERGENS OPHANGEN. OOK KUNNEN ZE UIT VAN ALLES GEMAAKT WORDEN.

BOOMSPIEGEL — LOCATIES

BLOEMBAKKEN
GEVELTUIN
MIDDENBERM



HEB JE EEN BOOM MET EEN LEEG STUK GROND EROMHEEN, WEES NIET BANG OM HET TE CLAIMEN EN ER ZELF PLANTJES (VOLLEDIG LEGAAL) TE PLANTEN.

MIDDENBERM — LOCATIES

GEVELTUIN
BOOMSPIEGEL
BLOEMBAKKEN



ONDANKS ALLE AUTOS KUNNEN MIDDENBERMEN OMGETOVERD WORDEN TOT PRACHTIGE STADSTUINEN.

Roles category

ADVISEUR — ROLLEN

VRIJWILLIGER
ORGANISATOR
NETWERKER



ALS ADVISEUR HEB JE DE TAAK OM ANDERE BIJ TE STAAN MET ADVIES EN KENNIS. EEN MIDDELPUNT IN DE WIJK WAAR IEDEREEN TERECHT KAN.

VRIJWILLIGER — ROLLEN

ADVISEUR
ORGANISATOR
NETWERKER



DE VRIJWILLIGER ZIET GRAAG EEN GROENERE WIJK. HIER IS ALLEEN NIET ALTIJD DE TIJD VOOR. DE VRIJWILLIGER DOET DUS SPORADISCH MEE MET GROTERE ACTIES.

ORGANISATOR — ROLLEN

ADVISEUR
VRIJWILLIGER
NETWERKER



DE ORGANISATOR ORGANISEERT BURENDAGEN MET ALS DOEL MENSEN AAN ELKAAR TE VERBINDEN OF SAMEN ACTIE TE ONDERNEMEN IN DE WIJK.

NETWERKER — ROLLEN

ADVISEUR
VRIJWILLIGER
ORGANISATOR



DE NETWERKER KENT VEEL MENSEN IN DE WIJK EN WEET WAT IEDEREEN IN ZIJN MACHT HEEFT. OP SOCIAL GEBIED WEET JE ALTIJD DE JUISTE MENSEN TE VINDEN VOOR EEN TAAK.

Plants category

EETBAAR — PLANTEN

SCHADUW
BLIJE BIJEN
SLECHTE GROND



DE KERSTOMAAT IS EEN MAKKELIJKE PLANT DIE VOLOPT VRUCHTEN GEEFT. STAAT GRAAG OP EEN BESCHUTTE PLEK MET VEEL VOEDINGSTOFFEN.

SCHADUW — PLANTEN

EETBAAR
BLIJE BIJEN
SLECHTE GROND



KRUIPEND ZENEGROEN IS EEN BODEMBEDEKKER DIE SNEL EEN GROTE PLAK GROND BEWOONT. DE PLANT WERKT GOED TEGEN ONKRUID

BLIJE BIJEN — PLANTEN

SCHADUW
EETBAAR
SLECHTE GROND



SLANGENKRUID BIEDT OVERVLOEDIG NECTAR EN IS DAAROM ZEER GELIEFD BIJ BIJEN. WERKT HET BEST IN EEN ZONNIGE EN WATERDOORLATENDE PLEK.

SLECHTE GROND — PLANTEN

SCHADUW
BLIJE BIJEN
EETBAAR



OOIEVAARSBEK IS EEN ONDERHOUDSARME PLANT DIE HET BIJNA OVERAL GOED DOET. DIT IS ER EEN VOOR DE GEMAKT LIEFHEBBERS.

Action category

BLOEMBOLLEN — ACTIE

PLANT IN BLIK
STOEPKRIJTEN
GEKKE ITEMS



BLOEMBOLLEN MAAK JE GEMAKKELIJK ZELF MET WAT ZADEN, WATER, GROND EN EEN BEETJE KLEI. ALS ZE EENMAAL AF ZIJN KUN JE ZE OVERAL GOOIEN EN PLANTEN ZIEN OPBLOEIEN.

PLANT IN BLIK — ACTIE

BLOEMBOLLEN
STOEPKRIJTEN
GEKKE ITEMS



OOK LOS VAN DE BODEM KUN JE JE WIJK OPVROLIJKEN. ZO KUN JE BIJVOORBEELD BLIKKEN MET PLANTEN AAN BOMEN EN PALEN HANGEN.

STOEPKRIJT — ACTIE

BLOEMBOLLEN
PLANT IN BLIK
GEKKE ITEMS



MET STOEPKRIJT DE NAAM BIJ PLANTJES SCHRIJVEN, IS EEN GEWELDIGE MANIER OM PASSANTEN OP DE PLANTEN TE WIJZEN EN WAARDERING TE CREEËREN.

GEKKE ITEMS — ACTIE

BLOEMBOLLEN
PLANT IN BLIK
STOEPKRIJT



JE KUNT PLANTEN IN PRINCIPE BIJNA OVERAL PLANTEN. ZO LANG ER MAAR ZON, GROND EN WATER IS. PROBEER EENS EEN ZO GEK MOGELIJKE ITEM TE BEPLANTEN.

Appendix D

Prototype test Quartet game
Quartet cards prototype

Tips & tricks category

GOEDKOOP — TIPS & TRICKS
TEGELBREKEN
BUDGET
RONDVRAGEN



WIL JE GOEDKOOP AAN MEER PLANTEN KOMEN? STEKKEN, SCHEUREN EN AFLEGGEN IS DAN DE "WAY TO GO".

TEGEL BREKEN — TIPS & TRICKS
GOEDKOOP
BUDGET
RONDVRAGEN



BIJ HET MAKEN VAN JE GEVELTUIN KUN JE EEN TEGEL IN DE GROND BEGRAVEN OM DAARMEE MAKKELIJK ANDERE TEGELS TE HALVEREN. DEZE KUNNEN ALS MUUR GEBRUIKT WORDEN.

BUDGET — TIPS & TRICKS
GOEDKOOP
TEGELBREKEN
RONDVRAGEN



WIL JE VEEL GROENE ACTIE ONDERNEMEN MAAR HEB JE NIET TE VEEL GELD TE BESTEDEN? PROBEER DAN SAMEN TE WERKEN MET DE GEMEENTE.

RONDVRAGEN — TIPS & TRICKS
GOEDKOOP
TEGELBREKEN
BUDGET



WIL JE ACTIE ONDERNEMEN? VRAAG DAN VOORAL ROND IN DE WIJK EN BIJ JE BUREN. JE ZULT VERAST ZIJN MET HOEVEEL MENSEN JE IDEEËN DELEN.

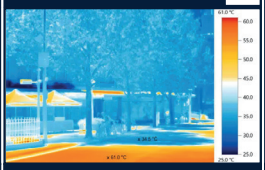
Impact category

STEPPING STONE — IMPACT
TEMPERATUUR
VOEDSEL
GEZONDHEID



KLEINE GUERRILLA TUINTJES MAKEN HET MAKKELIJKER VOOR INSECTEN OM NAAR DE ANDERE KANT VAN EEN STAD TE REIZEN EN NIEUWE POPULATIES TE BEREIKEN

TEMPERATUUR — IMPACT
STEPPING STONE
VOEDSEL
GEZONDHEID



PLANTEN HEBBEN DE KWALITEIT OM ZON GOED TE ABSORBEREN EN SCHADUW TE CREEËREN. DIT ZORGT VERVOLGENS WEER VOOR EEN KOELERE STAD.

VOEDSEL — IMPACT
STEPPING STONE
TEMPERATUUR
GEZONDHEID



PLANTEN ZORGEN VOOR VOEDSEL VOOR VELE INSECTEN. BIJEN GEBRUIKEN HET NECTAR VAN DE PLANT EN RUPSEN ETEN DE BLADEREN.

GEZONDHEID — IMPACT
STEPPING STONE
TEMPERATUUR
VOEDSEL



GROEN IN DE BUURT HEEFT POSITIEVE EFFECTEN OP DE GEZONDHEID VAN BEWONERS. HET STIMULEERT BEWEGEN, VERMINDERD STRESS EN STIMULEERT SOCIAAL CONTACT.

Equipment category

GIETER — BENODIGHEDEN
BORDJE
SCHEP
KWEEKKAS



WAT IS EEN PLANT ZONDER WATER? NIKS. DE GIETER IS ESSENTIEEL OM JE PLANTJES GEZOND TE HOUDEN TIJDENS WARME ZOMER DAGEN.

BORDJE — BENODIGHEDEN
GIETER
SCHEP
KWEEKKAS



DOOR EEN BORDJE IN JE TUIN TE ZETTEN WETEN ANDERE MENSEN EN DE TUINIERS VAN DE GEMEENTE DAT ZE JOUW GUERRILLA TUINTJE NIET MOETEN WEGHALEN.

SCHEP — BENODIGHEDEN
GIETER
BORDJE
KWEEKKAS



EEN SCHEP MAAKT JE LEVEN ZO VEEL MAKKELIJKER TIJDENS HET PLAATSEN VAN JE PLANTJES.

KWEEKKAS — BENODIGHEDEN
GIETER
BORDJE
SCHEP



MET EEN KWEEKKAS KUN JE JONGE PLANTJES IN EEN BESCHERMDE OMGEVING WAT GROTER LATEN WORDEN VOORDAT JE ZE BUITEN PLAATST.

Contact category

FLYEREN — CONTACT
LOKALE KRANT
BUURTHUIS
MEDIA



MET FLYEREN KUN JE MENSEN BEREIKEN OM MEE TE HELPEN AAN JOUW EIGEN BIODIVERSITEITS INITIATIEF.

LOKALE KRANT — CONTACT
FLYEREN
BUURTHUIS
MEDIA



VEEL WIJKEN HEBBEN EEN LOKALE KRANT. VAAK KUN JE HIER EEN BERICHT IN PLAATSEN EN ZO JE BUURTBEWONERS UITNODIGEN DE WIJK GROENER TE MAKEN.

BUURTHUIS — CONTACT
FLYEREN
LOKALE KRANT
MEDIA



IN EEN BUURTHUIS KUN JE GEMAKKELIJK IN CONTACT KOMEN MET JE BUREN. DIT IS WELLICHT OOK DE PLEK WAAR JE MOOIE GROEN IDEEËN BEDENKT.

MEDIA — CONTACT
FLYEREN
LOKALE KRANT
BUURTHUIS



ALS JE JE INTIATIEF WAT GROTER WILT MAKENKUN JE GEBRUIK MAKEN VAN MEDIA. DENK HIERBIJ AAN LOKALE ZENDERS OF RADIOSTATIONS.

Appendix D

Prototype test Quartet game

Observation result

Test #1 Friends on a Saturday night.

The test took place during an evening with six friends. This is already an environment where games can be played. Therefore, when I explained what the test was, there was an enthusiastic response. One of the participants also mentioned that she likes it even more because I made the prototype myself. For the reason that the game is intended for four people, two rounds were played. While shuffling and dealing the cards, no one was really paying attention and the topic on the table was still being discussed. Once I finished and asked for their attention, they were more focused. The first round was played by four friends while I and two other friends watched. At first, it took a while for them to start playing because all participants were still reading through the cards. The game started slowly after that. It was seen that three of the four participants also read the cards they received directly. This caused the speed to drop a bit every now and then as not everyone realized that the game allows you to continue playing after correctly guessing a card. Later in the game, the participants addressed subjects related to some of the cards. For example, one of the participants told a story about how her mother once put a planter on the street, which was then gone the next day. It was clear to see that the subjects and explanations on the cards sparked a conversation. Sometimes the game was even paused to have and actually discussion about some of the subjects. In addition to the conversation, it was also seen that the players liked it and they did not get bored. There was some laughter every now and then, but this should not only be devoted entirely to the game. It was a Saturday night, after all.

In the end there was a winner. The game ended but three of the participants also wanted to see the other cards. The cards were being passed around. After that the four participants started to fill in the survey. I shuffled the cards at the same time and finished the second deck.

The second game was quite similar although there were now three people who were inactive. These started their own conversation while we played on. Again stories came up and the cards were studied by the two new participants. After the game, the cards were not being passed around so they went straight to filling in the survey.

Test #1 colleagues on Sunday afternoon

The test was conducted during working hours at the cinema where I work. It was not busy and therefore asked at quiet moments whether colleagues would like to play a quartet game. I laid out the game on a table and asked four colleagues to join me. They appreciated the little break so they were happy to participate. Once they were seated, the game started right away. The game was quite similar to the friends game. However, slightly fewer stories were shared and there was less time afterwards to go through the cards. After all, there was still work to be done. It was also clear to see that there was good mutual contact and every now and then the game was stopped for a while to make a comment or start a conversation. As mobiles phones are not allowed during working hours I gave them the work tablet and my own laptop on which they could complete the survey. Later in the afternoon when the shifts were changed I set up the game again. This test again gave similar results.

Appendix D

Prototype test Quartet game

Result observation summary

The participants generally enjoyed participating. This was partly because I knew the participants personally and they were curious about what I had made. Most participants read the cards. During the game conversations were held related to the subjects on the cards. Sometimes the game was even stopped because of conversation.

Result Quartet survey

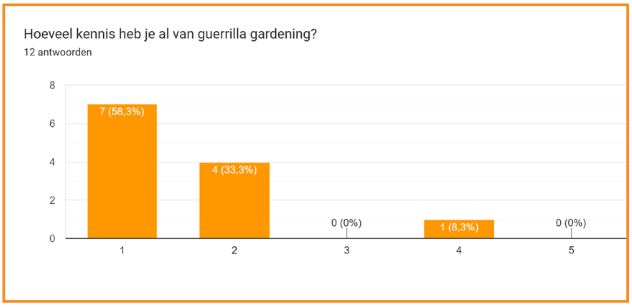
The results of the survey. Created using google forms.

Prior knowledge

The first graph clearly shows that the participants indicate that they do not have much knowledge of guerrilla gardening. Only one participant, a colleague, has performed guerrilla gardening before.

Knowledge gain

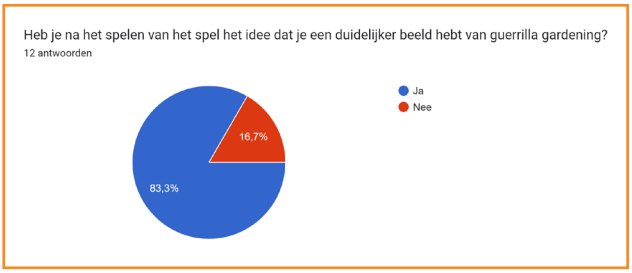
Ten of the Twelve participants indicate that they have a clearer picture of Guerrilla Gardening and what it entails. nine of the twelve participants indicate that they have learned something new through the game that they did not know before.

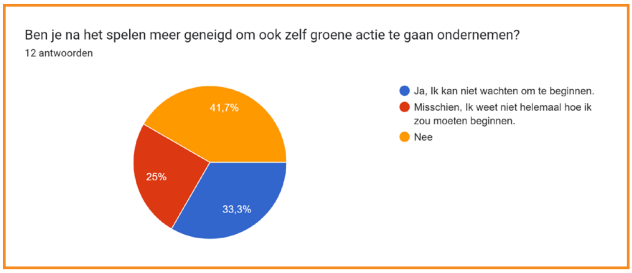


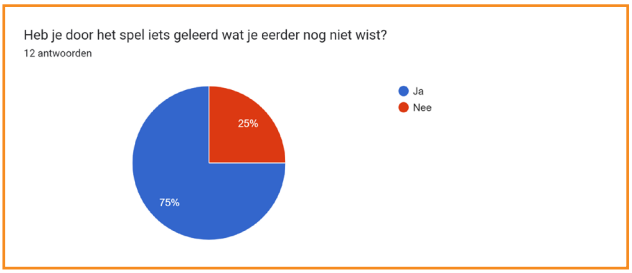
Prior knowledge

Inspiration and action

Four participants indicate they are inspired to take biodiversity action after playing the game. Three participants do not know for sure and five do not. Nine out of twelve participants indicate they would not perform any action present in the game.







Gained knowledge



Inspiration and action

Appendix E

Prototype test Action cards

Test procedure Iteration #3 Action cards

The prototype has been tested in the Irisbuurt in Eindhoven with citizens that going to the supermarket. On Monday afternoon 25 July, I placed the prototype of the biodiversity wheel in front of the supermarket. In addition to the biodiversity wheel, I had the eight action cards with me to hand them out to the people. In total I had ten sets to be able to hand out enough. The focus was entirely on the action cards and no further notes were made for the biodiversity wheel.

Prototype

The prototype consists of eight paper cards with information on them. The cards have a clear title. an icon and text. The cards are divided into two categories: Actions and Workshops. The action cards focus on small momentary actions. These are the actions that can be done just as quickly in between and do not require much time.
The Workshop cards are actions that need more explanation and often take longer. These workshop cards are divided into steps that the users can follow.
The back of the cards has a guideline. The card asks if the user can use help. My phone number and my email address have been added here
The cards are fully visible on the next page.

Test

The test consists of three parts and takes about 15 minutes.

Part 1 introduction
First I gave a brief explanation about the thesis followed by the question whether the citzens want to participate in a small experiment. Then I asked them to talk about if and how they are involved with biodiversity in their neighborhood or environment.

Part 2 interact
After the introduction I invited the participants to interact with the prototype. In the meantime I observed them and already tried to figure out which cards might suit them.

Part 3 Open conversation
After the interaction, when they have found a role, I started an open conversation on what they think their role means and if they want to take action. During this conversation I made a selection of cards. I presented these cards to the user and asked them if they would like to take these home. Once the participant takes the cards I asked them to read it and speak their mind.

Appendix E

Prototype test Action cards

Action card prototype

These are the cards used as the first prototype for iteration #3. It consists of eight cards of which four short action cards and four workshop cards. On the back a helpline is offered.

Actie

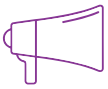
Actie



Scout je plek

Neem een wandeling door je wijk. Zoek naar kale sukken grond, waar je liever planten of bloemen wilt zien. Denk aan kale ruimte rond een boom, een middenberm of zelfs een dak. Of zie je een bouwterrein of parkeerplek waar al jaren niks mee gebeurt?
Tip: Neem een camera mee. Dan kijk je toch altijd iets scherper.

Actie



Laten eens horen

Vaak zijn er al veel gelijk gestemde wat betreft biodiversiteit. Vraag eens rond of er interesse is om de wijk groener te maken.

Gebruik hierbij whatsapp of maak bijvoorbeeld een A4tje die je bij je buren in de brievenbus kan doen of bij de supermarkt op kan hangen.

Actie



Stoepkrijt actie

Stoepkrijt is een geweldige manier om andere mensen bewust te maken van de mogelijkheden in de wijk.
Zet een cirkel om mooi onkruid heen en schrijf waarom je het kan waarderen.
Zet een grote pijl bij droge boomspiegels en nodig mensen uit er iets te doen. Je kan dit wellicht ook met een kartonnen bordje doen.
Voeg waar mogelijk #stoepplantjes toe zodat mensen meer informatie kunnen vinden.

Actie



Water geven

Loop eens met een gieter door je wijk. Probeer hier elk stukje droog gras, uitgedroogde plant of platsoen een goeie plens water te geven.

Doe dit het liefst in de ochtend of avond. Het is niet goed voor planten om water te krijgen als de zon nog volledig op ze aan het schijnen zijn.

Workshop

Workshop



Gevel tuintje maken

1. Kies een goede plek. Dit kan voor de deur zijn of bijvoorbeeld in een steegje.

2. Haal de tegels weg of gebruik ze als afscheiding voor je tuintje (dit is gewoon legaal).

3. Voeg voedzame aarde toe. (haal ook wat wit zand weg)

4. Lokale planten erin en water erbij. (Google even voor goeie planten)

5. Beheer je geveltuin.

Workshop



Claim een Boomspiegel

1. Adopteer een boomspiegel bij je in de buurt.

2. Voeg een laag voedzame aarde toe.

3. Plaats planten of zaai zaadjes.

4. Geef water.

5. Beheer je boomtuin. Dan blijft het er mooi uit zien en heb je langer plezier ervan.

Workshop



Bloembom maken

1. Vul een kom voor de helft met aarde of tuingrond.

2. Doe hier wat bloemzaadjes en genoeg water om de aarde plakkerig te maken.

3. Kneed de inhoud net zo lang totdat de aarde en het zaad goed gemengd zijn.

4. Rol van het mengsel 10 tot 15 balletjes ter grootte van een stuiterbal. Laat de balletjes drogen.

5. GOOIEN MAAR!

Workshop



Plantendag organizeren

1. Bepaal een datum

2. Bedenk wat je wilt gaan doen. Bijv. Tegelswippen, boomspiegels planten, enz.

3. Maak een uitnodiging en verzamel mensen die mee willen doen.

4. Leg op de dag zelf nog eens uit wat het plan is.

5. Geniet van het nieuwe groen.

Backside

Hulp nodig?

Wil je meer weten, heb je nog vragen of heb je hulp nodig?

Stuur een bericht naar Tijmen:
+31657028146

of stuur een mailtje naar
Tijmen_vh@outlook.com

Appendix E

Prototype test Action cards

Result

Unfortunately it was very cold on the day of testing and therefore not many people were to be found outside. Even though I spent one hour at the supermarket, I could only test the prototype with four participants. More citizens were around, but they had no time to talk because they were on their lunchbreak, had another appointment or were not interested.

Eventually this test was conducted with four people. All four participants were residents of the Irisbuurt and had no prior knowledge to biodiversity initiatives. However they were all interested in being more active on that part and started the interaction. The interaction with the biodiversity wheel looked similar to the result of the previous test. For the biodiversity wheel, no further observation has been made of this.

I had also addressed a foreign man who could not speak Dutch. Both the cards and the biodiversity wheel are in Dutch and this man could not participate.

During the interaction with the biodiversity wheel two participants were very vocal and clear about their decisions. This made it easy to find cards that are suitable. One of the participants was very interested in the concept of the seedbombs. So it was clear that this person got the seedbomb workshop. In addition, I had also given him the "scout your spot" and "watering". He was clearly less interested in this. He quickly glanced over this before continuing to look at the seedbomb card.

Picking out the cards wasn't always easy. A participant used the wheel and chose a role that did not come from his choice of the choice layers of the biodiversity wheel. So there were heaps of options to give as cards. Also in the conversation afterwards, these participants' interests did not seem to have a clear preference. As a result, six cards were eventually given away. It is not clear whether this subsequently led to information anxiety. One of the participants was not very talkative. As a result, the cards are based on the choices of the biodiversity wheel. Since the man was not very talkative, it is not clear whether the cards personally matched.

Three of the four participants indicated that they did not find the information very engaging. Two participants returned the cards. For one, the reason was because he preferred to just google it at home for a more elaborate build. The other said she wasn't that interested and that I should give the cards to someone else.

Conclusion

Evaluating this prototype test gave the insights that just handing out flyers is not enough to active people. After an hour of testing with only four participants, only one participant was happy with the cards. This gave me enough conviction to conclude that the cards are not doing what they are supposed to do. The participants did not seem to inspired by the provided information. This is also seems due to the minimal information the cards provide.

Appendix F

Prototype test Action cards optimized

Test procedure Iteration #4 Action cards continued

The prototype of the improved action cards was tested by people from my social bubble in the week of August 15th. I had made both an online and offline version. A digital variant of the selection menu of the biodiversity wheel has also been made to facilitate that there are only four roles. This "role quiz" was a minimalized version of the biodiversity containing only the four new established roles.

Link to role quiz: https://forms.gle/CwMDEncFwcBBYFaZ7

Prototype

The prototype consists of 41 cards. These cards are divided into four phases. phase one introduces the impact and upcoming actions. Phase two comes in the form of small actions. Phase three consists of workshops and phase four is a celebration. Self-reflection cards are present between these phases. All cards are text based and some are supported with example images. There is also an indication of how difficult the card is to perform.
The cards are modular and have the capability to form four different sequences for the four different roles. The cards can be seen on the following pages.

Test

The goals was to get people to use the cards in a personal situation and ,in time, conduct an interview on the experience they have had. The interview focused on the set list of criteria, the appearance and the overall experience of the interaction. The participants used the cards at home and were contacted by me after a week. They would then be questioned on their experience with the cards.

Approach offline

After the interaction with role quiz participants were handed the action cards with a short explanation on what they are for and how to use them. The role specific deck of cards is selected by me based on the results off the quiz. After that the participants are asked to use the cards and meet again for an interview in about a week.

Approach online

Participants were asked to do the online role quiz which eventually led them to one of the four prepared roles. Here they have a small explanation of the role and an invitation to download the sequence of action cards related to that role. The document contained a short explanation on what the cards are for and how to use them. They could either print the cards or use them as an online document. After a week of testing an online interview is held.

Interview questions

Which cards have you performed?
How did you experience this?
Are the cards clear?
Is the information personal?
Have you involved other people in your ventures?
How did you like the QR codes?

Appendix F

Prototype test Action cards optimized

Prototype action cards optimized

These are the cards used as the first prototype for iteration #3. It consists of eight cards of which four short action cards and four workshop cards. On the back a helpline is offered.

Phase 1 introduction

SCOUT JE PLEK

Voordat je aan het vergroenen van je wijk kan beginnen is het belangrijk om te weten waar je het kan doen. Met deze actiekaart zou ik je uit willen nodigen om eens rond te lopen in je wijk. Zoek naar kale sukken grond, waar je liever planten of bloemen wilt zien. Denk aan kale ruimte rond een boom, een middenberm of zelfs een dak. Of zie je een bouwterrein of parkeerplek waar al jaren niks mee gebeurt?

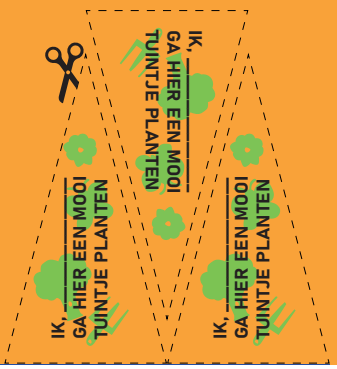
Tip: Neem een camera mee. Dan kijk je toch altijd iets scherper.

VOORBEELDEN



VLAG PLANTEN

Probeer een geschikt stukje grond voor jezelf te claimen. Knip gerust deze vlag uit. Zet je naam erop en plak hem aan een saté stokje. Plaats hem in de grond waar je jouw tuintje wilt beginnen!



IMPACT VAN JE ACTIE

Natuur en de stad klinken als zaken die elkaar uitsluiten. Natuur is immers altijd buiten de stad? En de stad is een bedreiging voor de natuur? Niets is minder waar. Tussen onze huizen zijn volop plekken waar planten en dieren zich thuisvoelen. De diversiteit van planten en dieren in de stad blijkt soms verrassend hoog te zijn.

Met tuinieren, 'gewoon' én Guerrilla Gardenen, blijken we de diversiteit van planten en dieren in onze buurt een enorme boost te kunnen geven!

Niet alleen de natuur heeft voordelen bij guerrilla gardening ook mensen blijken een stuk gezonder te zijn als zij omgeven zijn met groen. Het helpt bijvoorbeeld stress verminderend, Het stimuleert om te bewegen en zorgt voor meer sociaal contact.

MEER WETEN?

Een groene wijk is een gezondere en leefbaardere wijk.

GRATIS PLANTEN

Hoe kom je aan goedkoop of gratis aan planten?

Kweek ze zelf op uit zaden, noten of pitten uit je eigen omgeving, eikels en kastanje bijvoorbeeld. Dat is goedkoop en leuk!

Struin sites af als Marktplaats en Gratis op te halen. Haak in op een actie waarbij de gemeente of een goed doel, zoals Stichting Steenbreek, gratis planten weggeeft.

Kijk biotelers / plantencentra lief aan voor goedkope planten of planten die over zijn. Wanneer planten zijn uitgebloeid belanden ze soms zelfs in de container!

Heb je een eigen tuin? Haal ze dan uit je tuin. Geen tuin? Doe een oproep aan mensen die je kent die planten uit hun tuin over hebben.
Ga eens struikroven: planten redden van een terrein waar gesloopt wordt en die een nieuw leven geven.

Vermeerder de planten die je al hebt! Maak een stekje van een plant die je gaaf vindt, of 'scheur' de plant. Zo kun je met minder kosten toch een flink stuk grond beplanten.

Phase 2 small scale action

ZAAIEN! ACTIE

ZONNEBLOEMN IN LENTE

Moeilijkheidsgraad:

Waarschijnlijk is het de oudste guerrilla gardening actie die er is: de natuur een handje helpen door zaden van mooie bloemen mee te nemen en uit te strooien op kale grond. Vooral een zonnebloem doet het erg goed. De paar zaden die je in een boomspiegel plant zorgen een paar maanden later voor een gele oase.

De beste tijd om dit te doen is van **half april tot en met mei.** Verspreid de zaadjes op de grond en schep er een laag aarde overheen.



ZAAIEN! ACTIE

THUIS KWEKEN IN WINTER

Moeilijkheidsgraad:

De winter wordt regelmatig gebruikt om voor te bereiden op het volgende jaar. Zo kun je vast plantjes opkweken in huis. Komkommerplant en radijsjes kunnen bijvoorbeeld al voorbereid worden.

Kun je niet wachten? Natuurlijk kunnen microgreens zaden en kiemgroente het jaarrond gezaaid en gegeten worden.



ZAAIEN! ACTIE

EIGEN SALADE IN ZOMER

Moeilijkheidsgraad:

De zomer is voor sommige groentes alweer de tijd om te oogsten, denk bijvoorbeeld aan vroeg gezaaide andijvie, veldsla, radijsjes of spinazie. Verder is het nog zeker niet te laat om te beginnen met nieuwe soorten te laten ontkiemen. Het seizoen duurt tegenwoordig tot eind oktober, dus tijd genoeg om alles te laten groeien.

Probeer eens een stukje grond te claimen met o.a. rucola, veldsla of postelein. Kun je straks genieten van je eigen gekweekte zomersalade.



ZAAIEN! ACTIE

VOORBEREIDEN IN HERFST

Moeilijkheidsgraad:

Doordat de dagen korter worden, minder licht en koude nachten kun je eigenlijk in de volle grond niets meer zaaien. Eventueel nog winterspinazie, maar dan houd het wel op. Je kunt terugkijken op een heerlijk guerilla seizoen en uiteraard alweer kijken naar het nieuwe seizoen, wat je waar wilt zaaien of wat je het komende jaar anders gaat doen.

Probeer alvast wat ideeën te bedenken voor het nieuwe siezoen. Bereid de zaden voor. Maak alvast een hoop bloembommen. Maak plannen met je buren.

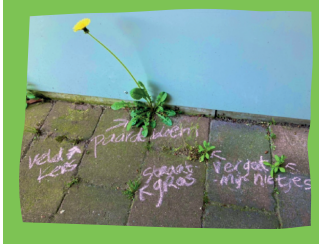


STOEPKRIJT ACTIE

Moeilijkheidsgraad:

Stoepkrijt is een geweldige manier om andere mensen bewust te maken van de mogelijkheden in de wijk. Zet een cirkel om mooi onkruid heen en schrijf waarom je het kan waarderen.
Zet een grote pijl bij droge boomspiegels en nodig mensen uit er iets te doen. Je kan dit wellicht ook met een kartonnen bordje doen.
Voeg waar mogelijk #stoepplantjes toe zodat mensen meer informatie kunnen vinden.

Vergeet niet dat je dit kan doen wanneer je er ook maar zin in hebt. Voor herhalling vatbaar.



WATER ACTIE

Moeilijkheidsgraad:

Loop eens met een gieter door je wijk. Probeer elk stukje droog gras, uitgedroogde plant of platsoen een goeie plens water te geven.

Doe dit het liefst in de ochtend of avond. Het is niet goed voor planten om water te krijgen als de zon nog volledig op ze aan het schijnen zijn.

Met jouw water actie zorg je ook voor meer groen in de wijk!

Vergeet niet dat je dit kan doen wanneer je er ook maar zin in hebt. Voor herhalling vatbaar.



RONDVRAAG ACTIE

Moeilijkheidsgraad:

Vaak zijn er al veel gelijk gestemde wat betreft biodiversiteit. Vraag eens rond of er interesse is om de wijk groener te maken.

Gooi het onderwerp eens op tijdens een buurtfeestje of met je directe buren.

Je kan ook proberen een groene whatsapp groep te maken of maak bijvoorbeeld een A4tje die je bij je buren in de brievenbus kan doen om ze uit te nodigen tot een "groenere wijk meeting"



GATEN VULLEN

Moeilijkheidsgraad:

Het komt regelmatig voor dat er een stukje stoep of straat kapot is. Er kan een stuk tegel missen of er zitten scheuren in het wegdek.

Probeer deze schade eens om te toveren tot iets positiefs. Maak er kleine paradijsjes van.

Je hoeft het niet eens alleen bij planten te houden. Zo kan je ook een kleine mini woonkamer maken of een stukje hawaii. Reken er maar op dat je buurtgenoten dit kunnen waarderen.



Appendix F

Prototype test Action cards optimized

Reflection cards

DAGBOEKJE

Moeilijkheidsgraad:

Je kunt deze kaart het beste gebruiken met een van de zaai kaarten. Als je gezaait hebt duurt het altijd even voordat er resultaat te zien is. Probeer eens voor jezelf op te schrijven hoe je je voelt bij dit resultaat! Houd een dagboekje bij waarbij je opschrijft hoe jouw eigen guerrilla acties je laten voelen.



GUERRILLA WENS

Moeilijkheidsgraad:

Ga eens na wat jouw redenen zijn om mee te doen aan guerrilla gardening. Schrijf eens uit wat jouw wensen zijn en waarom je de wijk groener wil hebben. Op die manier heb je een duidelijk beeld waarom je mee doen en ervaar je hoogst waarschijnlijk veel meer motivatie om actie te ondernemen.



NATUUR TIJDLIJN

Moeilijkheidsgraad:

Wat voor rol speelt groen en natuur in jouw leven? Probeer eens een tijdlijn te maken van wanneer natuur echt een betekenis had in je leven. Dit kan zijn op vakantie in de bergen, misschien iets uit je jeugd of een bloemetje die je kreeg van vrienden.



Workshop Tree pit garden

BOOMSPIEGEL 1/6

Moeilijkheidsgraad:

Stap 1: Adopteer een boomtuin

Check of in jouw gemeente adoptie van boomspiegels mogelijk is. Wij maakten een overzicht voor je. Check ons overzicht van boomspiegel-beleid. Is er geen beleid? Soms helpt contact met de gemeente.
Adopteer je boomspiegel door een melding te doen bij de gemeente.
Kan adoptie niet? Kies dan bij de volgende stap voor planten die snel 'ondergronds' gaan, bloembollen!

BOOMSPIEGEL-BELEID

BOOMSPIEGEL 2/6

Moeilijkheidsgraad:

Stap 2: Kies je planten

Check de omstandigheden bij de boom. Veel of weinig zon? Droge of natte grond? Kies planten die hier bij passen. Onze tips voor Boomspiegel Besties vind je hier. Kies als het kan planten die zijn gekweekt zonder gif.
Zorg dat de bodem bedekt is zodat je tuin geen hondentoilet kan zijn. Dat doe je makkelijk met bodembedekkers.
Plant bloembollen in het najaar voor een vroege bloei. Kies bloembollen die zichzelf vermeerderen, dan heb je het volgende jaar zelfs meer bloemen.
Vermijd te dure planten. Kopen hoeft vaak niet eens: kijk eens online voor aanbod van gratis planten of neem stekjes uit je eigen tuin.
We lieten speciaal voor boomspiegels een mix inheemse, natuurlijk geteelde, zaadjes samenstellen.

BOOMSPIEGEL 3/6

Moeilijkheidsgraad:

Stap 3: Alles begint bij de bodem

Voeg een laag compost of mulch toe. Mulch is half verteerde bladeren, gehakseld gras of planten die je hebt gewied. Dit zorgt ervoor dat onkruid minder kans heeft en verbetert de bodem. Ook zorgt dit voor het beter vasthouden van vocht.
Hoog de bodem niet teveel op, maximaal 10 cm en vermijd het ophogen bij de voet van de boom.



BOOMSPIEGEL 4/6

Moeilijkheidsgraad:

Stap 4: Plaats de planten of zaai je zaadjes

Probeer zo min mogelijk de boomwortels te beschadigen. Graaf niet te diep. Onder een boomspiegel kunnen elektriciteitskabels liggen, rioolpijpen etc. Als je weerstand voelt bij het graven, kijk dan eerst wat het is voordat je verder graaft.

Tip: steken de boomwortels erg omhoog? Plaats dan potten in je boomtuin.



BOOMSPIEGEL 5/6

Moeilijkheidsgraad:

Stap 5: Voldoende water

Vooral in het begin is het heel belangrijk om je boomspiegeltuin veel water te geven. Zeker een grote gieter vol water per vierkante meter per dag.

Zodra de planten aanslaan, kun je minder water gaan geven. Bij een juist gekozen beplanting is water geven uiteindelijk nauwelijks nog nodig. Handig voor de luie tuinder!

4. Beheer je boomspiegeltuin

Houd je boomtuin bij, wied af en toe onkruid weg, voeg wat compost toe. Eigenlijk net als je in een gewone tuin zou doen.
Bezig zijn in je boomtuin levert geheid praatjes op. Je kunt buurtgenoten vertellen wat je doet. Het is gezellig en ook goed voor het draagvlak voor je tuin.



BOOMSPIEGEL 6/6

Moeilijkheidsgraad:

Stap 7: Inspireren van andere Guerrilla gardeners

Deel je foto's en verhaal met andere Guerrilla Gardeners. Laten we elkaar inspireren om die grijze stad te veroveren en om te toveren tot een groene oase. Delen kan via de Guerrilla Gardeners Facebookpagina, op Instagram met de #Treepitgarden of door te mailen aan de Guerrilla Gardeners.

MEER WETEN?

Appendix F

Prototype test Action cards optimized

Workshop Seedbombs

BLOEMBOMMEN 1/6

Moeilijkheidsgraad:

Stap 1: verzamel de ingrediënten

Nodig voor 10 bloembommen:

4 eetlepels klei
- bentoniet voor snel uitgooien.
- Rode klei als je ze wilt bewaren.
- Beide te halen bij online winkels voor pottenbakkers of bij een tuincentrum

5 eetlepels compost (of potgrond).
- Je kunt gewone 'huis, tuin- en keukencompost' gebruiken of ander organisch materiaal, zoals kokosvezel of potgrond

Bloemenzaadjes (grote zaadjes: twee theelepels / kleine zaadjes: halve theelepel).
- Bloembommen voor een braakliggend terrein: snel ontkiemende bloemen die goed doorgroeien. Bijvoorbeeld klaproos, korenbloem en kamille.
- Bloembommen voor blije bijen: Inheemse soorten die in het gebied thuishoren. Bijvoorbeeld duizendblad, klaver, dovenetel, peen en akkerklokje

Eventueel 2 theelepels chilipoeder
- Gewoon uit je kruidenrek. Hiermee houd je vervelende beestjes op een afstand.

BLOEMBOMMEN 2/6

Moeilijkheidsgraad:

Stap 2: De uitrusting die je verder nodig hebt

Behalve de zaden, klei, compost en eventueel chilipoeder, leg je ook dit klaar:

- Een kom
- Een lepel om mee te roeren
- Water (weinig, meer dan 50 ml heb je niet nodig)
- Een lege eierdoos



BLOEMBOMMEN 3/6

Moeilijkheidsgraad:

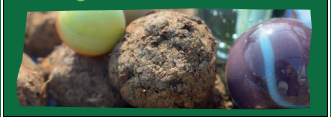
Stap 3: mengen!

Roer alle droge ingrediënten door elkaar in de kom. Voeg dan langzaam druppelsgewijs water toe. Blijf roeren tot je merkt dat je mengsel aan elkaar blijft plakken. Maak het niet te nat.

Stap 4: rollen

Tijd voor het echte werk: maak van je mengsel balletjes van ongeveer 3 cm doorsnede. Het is genoeg om er ongeveer 10 zaadbommen van te maken. Je kunt de bloembom eventueel nog een klein beetje afplatten (zodat het een vliegende schotel wordt). Daardoor blijft het straks op de bestemming beter liggen.

Heb je kleine zaadjes maak dan kleinere bommen. Maak je ze zo'n 2 cm groot, dan kun je er van dit mengsel 20 maken.



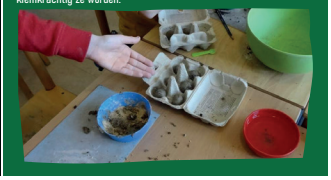
BLOEMBOMMEN 4/6

Moeilijkheidsgraad:

Stap 5: drogen & bewaren

Je balletjes kun je in de eierdoos goed beschermd bewaren. Als je ze bijvoorbeeld in je jaszak wilt meenemen, moeten ze goed droog zijn. Laat ze dan minstens 3 dagen in het donker (!) drogen.
Ieder soort zaad heeft weer andere omstandigheden nodig om te ontkiemen. Sommige zaadjes hebben kou nodig en andere weer warmte. Zo is het ook met licht en donker. Omdat je vaak een zaadmengsel gebruikt, kunnen sommige zaadjes al kiemen tijdens het drogen van de bloembommen. Dat ziet er minder mooi uit, maar je kunt ze nog prima gebruiken.

Let op: hoe langer je de zaadbommen bewaart, hoe minder kiemkrachtig ze worden.



BLOEMBOMMEN 5/6

Moeilijkheidsgraad:

Stap 6: bloembommen werpen

En nu is het tijd om bloembommen te werpen: op naar die plek in je buurt die wel wat bloemen kan gebruiken! Het liefst kies je een plekje met redelijk wat zon. Neem water mee om de bommen een frisse start te geven. Als het lange tijd niet regent, is het slim om de bommen regelmatig wat water te geven.

Als je zelf niet bij de plek kunt, ga dan bij voorkeur op een regenachtige dag, zodat de zaadjes meteen een flinke plons water over zich heen krijgen.



BLOEMBOMMEN 6/6

Moeilijkheidsgraad:

Stap 7: Inspireren van andere Guerrilla gardeners

Deel je foto's en verhaal met andere Guerrilla Gardeners. Laten we elkaar inspireren om die grijze stad te veroveren en om te toveren tot een groene oase. Delen kan via de Guerrilla Gardeners Facebookpagina, op Instagram met de #bloembom of door te mailen aan de Guerrilla Gardeners.

MEER WETEN?

Workshop Organize

ORGANISEREN 1/4

Moeilijkheidsgraad:

Welk deel van jouw buurt is verwaarloosd en kan wel een bloemeninjectie gebruiken? Een stenig buurtplein? Een betonnen schoolplein? Een groot project als dit kun je het beste samen met je buurtgenoten en in afstemming met de gemeente opzetten.

Stap 1: Onderzoek en praat met de buren

Praat met de mensen in de buurt. Willen ze een schonere straat, of meer veiligheid?
Er bestaan veel geweldige groene initiatieven, misschien is er al een bij jou in de buurt. Of misschien kun je een idee van elders adopteren.



ORGANISEREN 2/4

Moeilijkheidsgraad:

Stap 2: Vorm een werkgroep

Een groot project doe je samen met andere enthousiastelingen!

Stap 3: Vraag toestemming

Als je een groot project organiseert met een lange looptijd, adviseren we je om officieel toestemming te vragen aan de grondeigenaar of gemeente.

Stap 4: Maak een ontwerp

Giet de wensen van de buurt in het ontwerp, houd rekening met de voorwaarden van de grondeigenaar. Maak het gezellig voor de buurt met een wandelpaadje of een bankje. Bekijk onze plantenlijst voor tips.



ORGANISEREN 3/4

Moeilijkheidsgraad:

Stap 5: Plan je project

Hak een groot project op in fasen.
Bedenk welke spullen en materialen je nodig hebt en waar je ze vandaan haalt.
Markeer je tuin of vraag bij de gemeente een speciale stoeptegel aan.
Vraag zo nodig geld aan voor groot materieel en planten.
Bepaal tot slot op welke dag(en) en tijd(en) je aan de slag gaat. Het is leuk om een startmoment te prikken.



ORGANISEREN 4/4

Moeilijkheidsgraad:

Stap 6: Rekruteer medestrijders

Laat de buurt weten wat er staat te gebeuren. Stop bijvoorbeeld briefjes in de bus van de huizen vlakbij de plek waar je aan de slag gaat. Gebruik social media, een huis-aan-huiskrant, of de kanalen van de wijkvereniging om je project bekend te maken.

Maak een appgroep aan, of verzamel mailadressen van de mensen die willen helpen een stuur ze regelmatig updates.

Stap 7: Voer uit en herhaal

Een groot project spreid je uit over meerdere momenten om met je buurtgenoten aan de slag te gaan.

MEER WETEN?

Appendix F

Prototype test Action cards optimized

Workshop facade garden

GEVELTUIN 1/6

Moeilijkheidsgraad:

Een geveltuin mag je in vrijwel iedere gemeente aanleggen. Door een geveltuin aan te leggen hebben we samen een grote impact. Als een woning gemiddeld 5 meter breed is kom je met een diepte van één tegel al aan zo'n 1 tot 2 m2 extra groen per woning. Dit zet behoorlijk zoden aan de dijk voor insecten die op zoek zijn naar voedsel. En naast groen heb je zo ook extra waterberging. Het water gaat direct de grond in.

Stap 1: Adopteer je geveltuin

Google even op het beleid van je gemeente en kijk of je een geveltuin moet melden of niet.
Is er geen beleid? Wij zeggen gewoon doen. Maar als dat je onzeker maakt: zoek contact met de gemeente en in veel gevallen mag je gewoon aan de slag.



GEVELTUIN 2/6

Moeilijkheidsgraad:

Stap 2: Kies je planten

Je geveltuin is snel droog. Kies planten die hier tegen kunnen.

Houd bij het kiezen rekening met de plek van je geveltuin. Kunnen er hoge planten staan of kun je dan niet meer uit het raam kijken? Prinkplanten zijn langs de stoep ook niet zo handig. Bekijk onze tips voor gezellig geveltuinplanten.
Kies als het kan planten die zijn gekweekt zonder gif.

Probeer je planten zo uit te zoeken dat er iedere maand wel iets bloeit. Als je er ook nog bloembollen bij poot heb je al vroeg bloei. Kies bloembollen die zichzelf vermeerderen, dan heb je het volgende jaar zelfs meer bloemen.
Kopen hoeft vaak niet eens: kijk eens online voor aanbod van gratis planten of neem stekjes uit je eigen tuin.

GEVELTUIN 3/6

Moeilijkheidsgraad:

Stap 3: Haal de tegels weg

Wip de tegels die weg moeten op. De tegels die je uit de stoep hebt gehaald kun je meteen terugplaatsen: zet zo'n tegel overeind tegen de voorkant van je vlak. Als je een klein gedeelte uit laat steken heb je meteen een afscheiding gemaakt voor je tuin.
Let erop dat je de stoep wel voldoende breedt houdt zodat mensen met bv kinderwagens voldoende ruimte hebben. Richtlijn: minimaal 1,2 meter.
Tip: Je kan een tegel gemakkelijk breken door een tegelhalf de begraven zoals op de foto.



GEVELTUIN 4/6

Moeilijkheidsgraad:

Stap 4: Zorg voor de bodem

Vaak vind je onder de tegels witte zandige bouwgrond. Schep 40 tot 50 centimeter diep de grond eruit en vervang dit door tuinaarde vermengd met potgrond of compost. In de stoep kunnen allerlei kabels liggen, schep dus niet te diep en wees voorzichtig met het uitgraven. Het zou toch zonde zijn als je de internet kabel doorhakt met je schep.



GEVELTUIN 5/6

Moeilijkheidsgraad:

Stap 5: Plaats de planten

Als het goed is heb je alle grond al vervangen, dus het plaatsen van de planten is een makkie! Week de planten voor het plaatsen een kwartier in een bak met water, haal de plant daarna uit de plastic pot en plant hem in je geveltuin. Als de kluit heel compact is kun je deze voorzichtig met je handen een beetje losser maken.

Stap 6: Beheer je geveltuin

Let vooral op water! Geef je tuin water wanneer de bovenste laag aarde droog is. Liever een keer een hele grote plens dan iedere dag een beetje.
Houd verder je tuin bij. Wied af en toe onkruid weg, voeg 2 keer per jaar wat compost toe (zo'n 5 cm). Eigenlijk net als je in een gewone tuin zou doen. Je zult merken dat het ook erg gezellig is met de buren die een praatje komen maken.

GEVELTUIN 6/6

Moeilijkheidsgraad:

Stap 7: Inspireren van andere Guerrilla gardeners

Deel je foto's en verhaal met andere Guerrilla Gardeners. Laten we elkaar inspireren om die grijze stad te veroveren en om te toveren tot een groene oase. Delen kan via de Guerrilla Gardeners Facebookpagina, op instagram met de #geveltuin of door te mailen aan de Guerrilla Gardeners.

MEER WETEN?

Diploma

DIPLOMA

GEFELICITEERD

Je kan jezelf nu een echte gorrilla gardener noemen! Hopelijk hebben deze kaarten je geinspireerd en stop het hier niet voor je. Zet je guerrilla acties vooral door en laten we de Nederland net iets groener maken dan dat het al is!



Van guerrilla zaaien in een boomspiegeltuin tot het aanleggen van een volledige buurttuin, je mag helemaal los.

De volgende stappen die je zou kunnen nemen:

Meld je aan bij een overkoepelende guerrilla organisatie zoals guerilla gardening.

Maak zelf je initiatief groter en ga bijvoorbeeld met de gemeente in zee.

Verover nog meer territorium en claim nog meer tuintjes voor jouw en je guerrilla team.

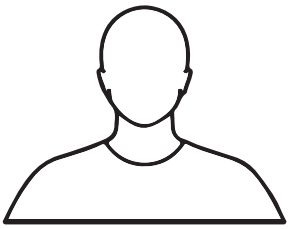
Appendix F

Prototype test Action cards optimized

Result Interview

Of the four participants, two took the offline approach and two took the offline approach. The two offline participants had done nothing at all and were therefore not further interviewed. The two online participants are discussed below.

Participant #1 Optimized action cards interview



Ingrid
Female, +/- 55 years old, citizen

Ingrid had been assigned the advisor role through the role quiz. She immediately looked through the cards when they were handed over.

When I came by for the interview a week later, she quickly let me know that she hadn't done much. She had read through most of the cards, but had only performed one action. This was one of the small actions. So she had skipped the actions that came before. Although she did not carry out everything, she indicated that she found the information interesting and that she had learned something new. She herself suggested to carry out the scouting map and to walk through the neighborhood. However, I didn't have the time for this myself, so we speculated through the cards. She thought the cards were clear. She thought the order of the cards made sense and suspected that this would indeed provide guidance. However, she had trouble with the QR code. When asked whether the cards matched their own interests, she answered positively.
When performing the action, she did not even realize that there was a degree of difficulty, but now afterwards she would rather not have known that. She thinks it would be demotivating.

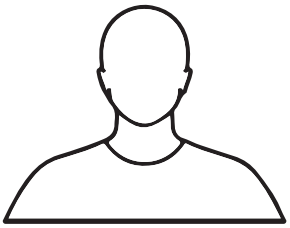
Main insights interview

Ingrid did not think of inviting others to join	Ingrid liked the information that was provided and thought it matched here personally	Ingrid suspects that difficulty level has a negative effect on motivation.
The structure didn't seem quite clear. Despite that, she gave a sense of guidance.	Ingrid had trouble with the QR-codes.	Ingrid performed only one action but was eager to do more.

Appendix F

Prototype test Action cards optimized

Participant #2 optimized action cards interview



Aurelle
male, +/- 25 years old, citizen

Aurelle had been assigned the bomber role through the role quiz. When I told him he could try out the cards for the whole week he put them away.

When I came by for the interview a week later, Aurelle hadn't taken any action. We therefore went through the cards together and speculated about real life situations. He found the information on the cards clear and showed him what to do. Although the cards are intended as a structure, he did not follow them. When I asked about it, she said that he has seen the structure but consciously does not stick to it. He liked the idea of the flags and wanted to plant them already. After going through the cards we performed the "scout your neighborhood" action. His girlfriend wanted to come along because she found the cards interesting. The three of us cycled through the neighborhood looking for good places to start guerrilla gardens. Aurelle wanted to keep the cards and perhaps perform them again later.

Main insights interview

- Aurelle did not like the selfreflection cards.
- Aurelle found the cards interesting and thought the text provided good instructions.
- Aurelle's girlfriend wanted to participate in the action.
- Although the structure was clear, Aurelle deliberatly deviated from this.
- Aurelle really liked the flags.
- Much of the information was surprising and new to Aurelle
- Aurelle really did not like the appearance of the cards.

Appendix F

Prototype test Action cards optimized

Result summary

The online participants have not used the cards, let alone looked at them at all. Self-printing therefore seems to be a clear barrier. There is also a suspicion that the document offers too much information on a screen. This may also be demotivating.

The two remaining participants had a similar experience and did not perform many actions in a week. They have not necessarily adhered to the structure, but they are aware of it. Both participants indicate that they are not interested in the difficulty level. One even indicates that it has a demotivating effect.

The information that was offered seemed to be clear and guiding. The participants also indicated that it matched their interests. The addition of physical nudges was appreciated. The self-reflection in it not so much.

Because the result came from only two participants, there was not much data to process. The insights of both participants have been combined into insight cards. These insight cards were added in the design sprint itself.

Appendix G

Growing the Movement cards

Phase #0 Explanation

Ready, set, GO

Before the user can start, an explanation is given about the purpose of the cards, how to use the cards and what the full contents of the box is. Through this phase the users knows what to expect and will use the cards as intended.

Frontside



Backside



Card #1

All roles

Frontside

Welcome is the first card that will be seen when opening the box.

Backside

The users is introduced to the purpose of the game.

Frontside



Backside



Card #2

All roles

Frontside

The use of the cards and he system of only using one card per step is explained.

Backside

A clear overview of the content of the box.

Appendix G

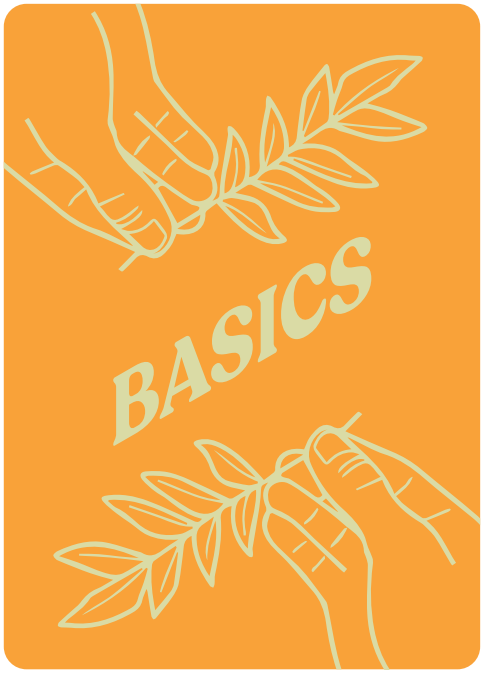
Growing the Movement cards

Phase #1 Introducion

Getting familiar

The main goal of this phase is to give the user a clear foundation to use as a kickstarter for the rest of the cards. After going through these cards the user should have: A clear view on why they want to participate, an increase in intrinsic motivation, a piece of land selected to renovate or use and a feeling of how the cards work.

Frontside



Backside



All roles

The first cards instantly let the users know that their actions and participation are valuable and have an impact on society. They are given the very basic of biodiversity participation but are welcome to use the QR-code provided to find out more about it.

The QR-code is a link to guerrillagardening.nl with more information about the positive impact.

Frontside



Backside



All roles

Frontside

This cards is the first of many action cards, recognized by the cutter icon. As this is the first action card it explaines how they should be approached timewise and that the user is welcome to invite others to join in their actions. This is also the first incentive to build a community.

Backside

"scout je plek" invites the user to explore the neighborhood and tofind possible sites to "claim".

Appendix G

Growing the Movement cards

Frontside



Backside



Advisor and Bomber

During the exploration action the user will be invited to plant a flag on a plot of land where they want to start a garden. Planting a flag is presumed to ignite the feeling of commitment.

Frontside



Backside



Organizor and Campaigner

This flag is planted in areas of derelict but usable land. It Invites other people to claim that piece of land and build a guerrilla garden.

Both of these flag actions are mainly intended for the user to look around more actively and to perceive their surrounding more consciously.

Appendix G

Growing the Movement cards

Phase #2 action

Take first action

The main goal of this phase is to get users to feel comfortable taking biodiverse action and changing their surrounding public space. After going through these cards the user should feel comfortable affecting the public space, an increase in knowledge and experience and the first attempts at building community

Frontside



Backside

Actie

Nu je de basis een beetje onder de knie hebt is het tijd om wat comfortabeler te worden met kleinschallige acties ondernemen. Denk hierbij aan zaadjes zaaien of plantenbakken op straat zetten of netwerken met geïnteresseerde buurtbewoners. De acties zullen vanzelf duidelijk worden aan de hand van de actiekaarten die volgen.



All roles

This first card provides an introduction of the following phase.

Frontside

Zaai actie

De gemakkelijkste actie die je kan ondernemen is het zaaien van planten. Zeker als je het juiste zaad in het juiste seizoen strooit hoef je soms niet eens je planten te onderhouden en groeit er vanzelf iets moois uit de grond. De komende twee kaarten zijn gericht op zaaiacties. Je kunt ze gerust uit het spel halen en bij je kalender hangen. Zo weet je precies wanneer je wat kan doen.

Tip!
Hoe kom je aan goedkoop of gratis aan planten of zaden?

Kweek ze zelf op uit zaden, noten of pitten uit je eigen omgeving, eikels en kastanje bijvoorbeeld. Dat is goedkoop en leuk! Maar er zijn natuurlijk nog veel meer opties. Op de achterkant staan enkele voorbeelden.

Z.O.Z.

Backside

Gratis zaden

- Struin sites af als Marktplaats en Gratis op te halen. Haak in op een actie waarbij de gemeente of een goed doel, zoals Stichting Steenbreek, gratis planten weggeeft.
- Kijk biotelers / plantencentra lief aan voor goedkope planten of planten die over zijn. Wanneer planten zijn uitgebloeid belanden ze soms zelfs in de container!
- Heb je een eigen tuin? Haal ze dan uit je tuin. Geen tuin? Doe een oproep aan mensen die je kent die planten uit hun tuin over hebben. Je kan ook planten redden van een terrein waar gesloopt wordt en ze een nieuw leven geven.
- Vermeerder de planten die je al hebt! Maak een stekje van een plant die je gaaf vindt, of 'scheur' de plant. Zo kun je met minder kosten toch een flink stuk grond beplanten.

All roles

Frontside

This action card invites the user to spread seeds around the neighborhood. This is an action with very low effort and low treshold

Backside

Tips on how to get plant-seeds for free

Appendix G

Growing the Movement cards

Every season has its own cardside making for four cardsides in total. Only two are represented as they are similar in explanaition.

Frontside



Backside



All roles

The "Sowing" cards succinctly explain where citizen could sow which plants. Sowing is a good first real action as they do not need after-care after performing it.

Included with these cards are calendar reminders that can be cut out and pasted on the correct date in a calender or agenda. In this way, the user is also reminded of the action to be taken in day-to-day life.

Frontside



Backside



All roles

Affirmation and shared values are "ingredients" of building a community. These compliment cards make it possible to show that you appreciate a neighbor's green effort. This neighbor will feel a sense of affirmation and knows that his or her values are shared. By adding the address, contact can be sought after if desired.

Appendix G

Growing the Movement cards

Role specific action

Since each role has a different function in an active neighborhood greening, different actions are required for each role. This page shows the actions assigned to them per role.

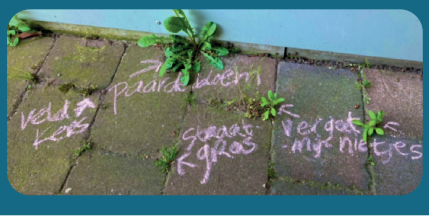
Frontside

Stoepkrijt

Stoepkrijt is een geweldige manier om andere mensen bewust te maken van de waarde van planten. Zet een cirkel om mooi onkruid heen en schrijf waarom je het kan waarderen.

Ook kun je hiermee mogelijke plekken markeren. Zet een grote pijl bij droge boomspiegels en nodig mensen uit er iets te doen. Je kan dit wellicht ook met een kartonnen bordje doen.
Voeg waar mogelijk #stoepplantjes toe zodat mensen meer informatie kunnen vinden.

Vergeet niet dat je dit kan doen wanneer je er ook maar zin in hebt. Voor herhalling vatbaar.



Backside

Watersquad

Loop eens met een gieter door je wijk. Probeer elk stukje droog gras, uitgedroogde plant of platsoen een goeie plens water te geven.

Doe dit het liefst in de ochtend of avond. Het is niet goed voor planten om water te krijgen als de zon nog volledig op ze aan het schijnen is.

Rondlopen met water geeft ook een goede kans om lekker in contact te komen met mede buurtbewoners.

Met jouw water actie zorg je voor meer groen in de wijk!

Vergeet niet dat je dit kan doen wanneer je er ook maar zin in hebt. Voor herhalling vatbaar.



Advisor

Frontside: Since the advisor already has some knowledge about biodiversity, chalk campaigining can be used to let other people in the neighborhood enjoy forgotten plants and learn something new.

Backside: Plants are having it increasingly difficult in the summer due to climate change. The advisor is invited to use their knowledge to water the plants correctly. This action also gives a great opportunity to get in touch with local residents a little more

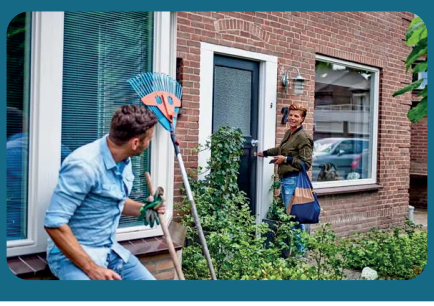
Frontside

Netwerk

Vaak zijn er al veel gelijk gestemden wat betreft biodiversiteit. Vraag eens rond of er interesse is om de wijk groener te maken.

Gooi het onderwerp eens op tijdens een buurtfeestje of met je directe buren.

Je kan ook proberen anderen te bereiken met flyers. Maak bijvoorbeeld een A4tje die je bij je buren in de brievenbus doet om ze uit te nodigen voor een "groenere wijk meeting"



Backside

Gemeente

Als campaigner is het belangrijk om te weten wat de mogelijkheden zijn. Veel gemeentes zijn blij met burgers initiatieven en hebben daarom graag contact met inwoners om dit te bevorderen. Deze kaart nodigt je uit om een mailtje te sturen naar de gemeente. Hierin kun je vertellen dat je de wijk graag wat groener wilt maken met je medebewoners. Dit contact met de gemeente kan uitgroeien naar ondersteuning van je campagne.



Organizer

Both actions are focused on social contact and the formation of a group of active participants. The front invites you to talk to fellow residents and to organize neighborhood meetings to talk about biodiversity in the neighborhood.

The back invites the organizer to go beyond the neighborhood and get in contact with the municipality. An involved municipality can ensure a more durable initiative.

Appendix G

Growing the Movement cards

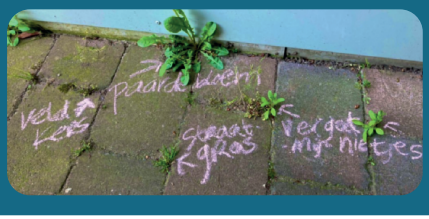
Frontside

Stoepkrijt

Stoepkrijt is een geweldige manier om andere mensen bewust te maken van de waarde van planten. Zet een cirkel om mooi onkruid heen en schrijf waarom je het kan waarderen.

Ook kun je hiermee mogelijke plekken markeren. Zet een grote pijl bij droge boomspiegels en nodig mensen uit er iets te doen. Je kan dit wellicht ook met een kartonnen bordje doen.
Voeg waar mogelijk #stoepplantjes toe zodat mensen meer informatie kunnen vinden.

Vergeet niet dat je dit kan doen wanneer je er ook maar zin in hebt. Voor herhalling vatbaar.



Backside

Groep vormen

Tijdens het netwerken is het handig om een actieve groep te vormen. Probeer nummers of email adressen te verzamelen met de buurt. Als er eenmaal een groep ontstaan is is het veel makkelijker om elkaar te contacteren voor groene acties.

Zo kun je de volgende keer dat je iets wilt organiseren een stuk sneller in contact komen met je buren.



Campaigner

The campaigner also has a chalk campaign action. However, it does not focus on the beauty of weeds. The campaigner uses the chalk to point out possibilities about guerrilla gardening to fellow residents

The back invites the campaigner to form an active group and mailinglist, facebook or whatsapp group and contact sheet.

Frontside

Plantenbak

Leg een tijdelijke tuin aan, simpelweg in een bloembak. Of vul iets anders op straat met bloemen. Wees creatief met wat je hebt. Een prullenbak, een schoen, een fiets of zelfs een auto?

Plantenwortels hebben ook zuurstof nodig. Laat onder in een bak dus geen water staan, dan verdrinken de wortels. Heeft je bak onderin geen gaatjes, maak deze er dan in. Is dat lastig, leg dan een laagje steentjes, kapot aardewerk of zelfs oude wijnkurken of sponzen onder in je bak.



Backside

Gaten vullen

Het komt regelmatig voor dat er een stukje stoep of straat kapot is. Er kan een stuk tegel missen of er zitten scheuren in het wegdek.

Probeer deze schade eens om te toveren tot iets positiefs. Maak er kleine paradijsjes van.

Je hoeft het niet eens alleen bij planten te houden. Zo kan je ook een kleine mini woonkamer maken of een stukje hawaii. Reken er maar op dat je buurtgenoten dit kunnen waarderen.



Bomber

Frontside

This side has instructions on how to turn anything into a flowerpot.

Backside

This side has an Invitation to fill up broken parts of the street or pavemont with mini "ecosystems"

These instructions are easy, short-term and close to home. A Bomber is characterized as someone who is short on time.

Appendix G

Growing the Movement cards

Phase #3 Workshop

Permanent changes

After the introduction and the small-scale actions the user should feel comfortable enough to undertake some bigger and permanent action. The workshop cards take the user step by step through the process. The organizer and campaigner both receive an organization workshop in addition to the regular workshops, to then carry out the regular workshop with several people. Only one workshop will be explained as they are all organized according to the same principle.

Frontside



Backside

Bloembom

Je kan je nu al bijna een guerrilla gardener noemen! Je krijgt het groen echt al in de vingers. Ben je klaar voor een grotere actie?

Een bloembom of zaadbom (zoals veel mensen het noemen), is een klein balletje dat bestaat uit klei, potgrond en het belangrijkste: bloemzaadjes. Deze gooi je ergens neer en tadaaa, later groeien op die plek prachtige bloemen en planten!

Doordat de bloembommen klein zijn en rond, zijn ze ideaal voor plekjes waar je niet zomaar bij kunt, bijvoorbeeld omdat er een hek omheen staat. Een bloembom stop je zo in je jaszak en je haalt hem eruit als je een plek ziet die wel wat groen kan gebruiken. Het enige wat je hoeft te doen, is jouw bloembom op de juiste plek werpen.

Deze workshop zal je door het maak process van deze bloembommen leiden.

Bomber

The workshop is introduced with an explanation of what the workshop will entail. This gives the user a clear expectation of what is to come.

Frontside

Bloembom 1/6

Stap 1: Ingredienten

10 bloembommen:
4 eetlepels klei
- bentoniet voor snel uitgooien.
- Rode klei als je ze wilt bewaren.

Beide te halen bij online winkels voor pottenbakkers of bij een tuincentrum

5 eetlepels compost (of potgrond).
Je kunt gewone 'huis, tuin- en keukencompost' gebruiken of ander organisch materiaal, zoals kokosvezel of potgrond

Bloemenzaadjes (grote zaadjes: twee theelepels / kleine zaadjes: halve theelepel).
- Zaden braakliggend terrein: snel ontkiemende bloemen die goed doorgroeien. Bijvoorbeeld klaproos, korenbloem en kamille.
- Zaden blije bijen: Inheemse soorten die in het gebied thuishoren. Bijvoorbeeld duizendblad, klaver, dovenetel, peen en akkerklokje

Backside

Bloembom 2/6

Stap 2: Benodigheden

Om de ingredienten te verwerken heb je het volgende nodig:

- **Een kom**
- **Een lepel om mee te roeren**
- **Water (weinig, meer dan 50 ml heb je niet nodig)**
- **Een lege eierdoos**

Tip: Voeg eventueel 2 theelepels chilipoeder toe.
Gewoon uit je kruidenrek. Hiermee houd je vervelende beestjes op een afstand.



All roles

The workshop takes the user through the information step by step. In this seedbombing workshop the first steps entail gathering ingredients and tools necessary to get started. Tips and tricks can be followed to make it easy for the user.

Pictures are provided to show examples.

Facade garden | Tree pit garden | Organize | Seed bombing



Advisor | Organizer | Organizer Campaigner | Bomber Campaigner

Frontside | Backside

All roles

The steps continued



Frontside | Backside



All roles

After the last step of conducting the workshop, the user is asked to share the results and inspire others. This can be done with local residents but also online.

If the user is inspired by this workshop and wants to know more, a QR-code is presented with a link for more information. This information is provided by the Guerrilla Gardeners website. This is also the first link towards the Guerrilla Gardeners organization.

Appendix G

Growing the Movement cards

Phase #4 Sharing and caring

Ownership and community

Now that the user has made a more permanent change, it is important to maintain it. The sharing and caring cards structure the experience of ownership to make the user feel responsibility and care for its realized garden. In order to prevent excessive ownership, the cards convey that the garden will still remain a public area and therefore for everyone to enjoy, despite the fact that the users is the "owner".

Frontside



Backside



All roles

This first card provides an introduction of the ownership actions

Frontside



Backside



Advisor and organizer

The next two actions are intended to show the outside world that it is more than a municipality garden.

Frontside: This side invites the user to place a sign to tell other citizens what the vision of the garden is. This ensures that neighbors understand the garden and the municipality workers do not demolish it.

Backside: Same as the frontside but with a barrier.

Appendix G

Growing the Movement cards

Only one side of the flag cards will be shown as the flags are supposedto be cut out and turned into a little flag in real life.

Frontside

Backside

Bloemnamen

Wil je echt een mooie connectie opbouwen met de guerrilla garden of gezaaide plantjes? Geef de planten in je tuin een naam. Onbewust bouw je hierdoor een band met je tuin op.

HOI, MIJN NAAM IS ___ IK WOON IN DIT TUINTJE

HOI, MIJN NAAM IS ___ IK WOON IN DIT TUINTJE

Satestok

Frontside

Hulp vlag

Heb je het idee dat niet meer genoeg tijd hebt voor de gecreeërde guerrilla garden? Geen zorgen! Een gemiddelde wijk zit vol met vrijwilligers die graag eens komen helpen. Laat ze gewoon een berichtje sturen naar je mobiel.

GEEN TIJD VOOR EIGEN TUIN? WE KUNNEN DEZE WEL DELEN! TEL: ___

GEEN TIJD VOOR EIGEN TUIN? WE KUNNEN DEZE WEL DELEN! TEL: ___

Satestok

Backside

Personaliseren

Nu je er een guerrilla garden gecreeërt is, is het belangrijk om het ook een beetje persoonlijk te maken. Dit zorgt er niet alleen voor dat je tuintje er leuker uit ziet maar het helpt ook tegen (onbedoeld) vandalisme. Door personalisatie wordt het bij de buurtbewoners en de gemeente duidelijk dat het tuintje bestaansrecht heeft. Gebruik bijvoorbeeld voorwerpen die al een tijdje in de opslag liggen en wel een tweede leven kunnen gebruiken. Je kunt dit ook samen doen met andere buurtbewoners.



Samen doen

Personaliseren kan ook op een hele andere manier! Zo kan een guerrilla garden ook gepersonaliseren worden naar de omgeving waar je in woont. Zo wordt het tuintje een echt buurttuintje die gewaardeerd wordt door iedereen! De beste aanpak is om dan samen te personaliseren. Werk samen met een school of buurthuis in de buurt en laat andere iets toevoegen aan je tuintje. Op die manier voelt iedereen wat liefde naar jouw tuintje.



Advisor and organizer

Flowernames: By giving the flowers and plants a name, a more intimate bond is created between the user and his garden. This contributes to the feeling of ownership.

Flag for help: If after a certain time the user no longer feels like having enough time or mood for the maintenance of the guerrilla garden, he or she can use this card to request help or even a complete transfer of a garden from the local residents.

All roles

Both of these cards request personalization of the created guerrilla garden. One has a more individual approach and the other requires community effort. They both emphasize the fact that the garden that has been created is still in public space and can therefore be viewed and appreciated by everyone.

Appendix G

Growing the Movement cards

Phase #5 Celebration
Feeling of competence

At the end of the cards, the user encounters the celebration phase. In this phases it is noted that the users have learned quite a bit with the cards and can now call themselves a guerrilla gardener. This gives the user a feeling of competence and will be more motivated to take action himself. Suggestions are also made for follow-up steps and self intiated action.

Frontside



Backside

Gefeliciteerd!

Je kan jezelf nu een echte guerrilla gardener noemen! Hopelijk hebben deze kaarten je geinspireerd en stopt het hier niet voor je. Zet je guerrilla acties vooral door en laten we de Nederland net iets groener maken dan dat het al is!
Van guerrilla zaaien in een boomspiegeltuin tot het aanleggen van een volledige buurttuin, je mag helemaal los.

mogelijke vervolgstappen

- **Meld je aan bij een overkoepelend guerrilla organisatie zoals guerilla gardening.**
- **Maak zelf je initiatief groter en ga bijvoorbeeld met de gemeente in zee.**
- **Verover nog meer territorium en claim nog meer tuintjes voor jou en je guerrilla team.**

All roles

The diploma card celebrates the completion of the sequence. It complements the user and follow-up suggestions are made.

Frontside

Wat nu?

Buurttuin

Probeer een samen met ander in de wijk een gezamelijke buurttuin op te bouwen. Met alle ervaring die je op hebt gemaakt met de ondernomen actie heb je nu genoeg vaardigheden om dat voor elkaar te krijgen. Het starten van een gemeenschapstuin biedt niet alleen een leuke manier om contact te maken met anderen in de buurt, maar het helpt ook bij het opbouwen van lokale sociale kring.



Backside

Wat nu?

Join the gang

Diploma ontvangen maar nog steeds hunkerend naar meer actie? Dan is het altijd een goed idee om een overkoepelende guerrilla gardening organisatie te contacteren. Zij organiseren regelmatig grootschallige evenementen waarbij kleinere initatief groepen mee doen en veel voor elkaar krijgen wat betreft groen en biodiversiteit.
Tel: 06-15546588
Mail: info@guerrillagardeners.nl



All roles

Both sides of this card show more follow-up suggestions

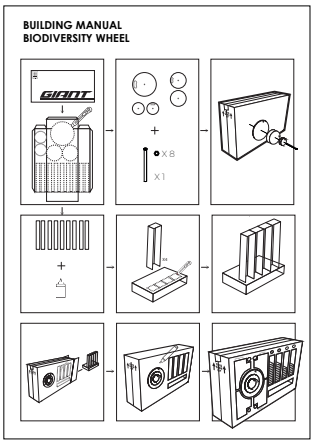
Appendix G

Growing the Movement cards

Campaigners extra phase

Self duplicating

As an special phase for the campaigner, some extras have been added. They receive the building plans of a DIY biodiversity wheel, a quartet game to familiarize people with the biodiverse possibilities and a download link where they can access the printable card games. In this way they can, if they wish, use this design project for their own purposes. This will make the card game self duplicating and has the chance to turn into a growing effort.



The Biodiversity wheel is made from a standard cardboard bicycle transport box. These are in abundance in the Netherlands and the bicycle repairman can miss them like a toothache. The instructions will explain to campaigner how to make a biodiversity wheel, in a familiar ikea style manual. After building it the campaigner then uses it in neighborhood gatherings or on the street.



The quartet game from iteration #2 is given to the campaigner to let people in the neighborhood know about the possibilities. The game can be played in home situations or during neighborhood gatherings.



The campaigner is provided with an online document containing all the action card decks. They can in turn provide these cards to their active group of participants.

Appendix G

Growing the Movement cards

Self-reflection
Intrinsic motivation

After every phase there is a self-reflection card. These cards allow the user to reflect on the undertaken action how it makes them feel. They make the users think about themselves and about the value of the biodiversity in the neighborhood. In this way they think for themselves why, or why not, they want to take action. Through these self-reflection cards the users are hoped to increases their intrinsic motivation.

Frontside



Backside



All roles

This is the first self-reflection card and comes after the introduction phase. An explanaition is given how to approach these kind of cards.

Next, The user is invited to make a list of reasons to participate in biodiverse action. The user is stimulated to think about their wishes and what they want to get out of their participation experience.

Frontside



Backside



All roles

This reflection card comes after the workshops and looks back on the sowing action. Considering the time passed between the sowing and the workshop is assumed to be more than two weeks. In this time the seeds often already sprouted and are visible. This card invites to reflect on how it makes the user feel to see their effort coming to fruition.

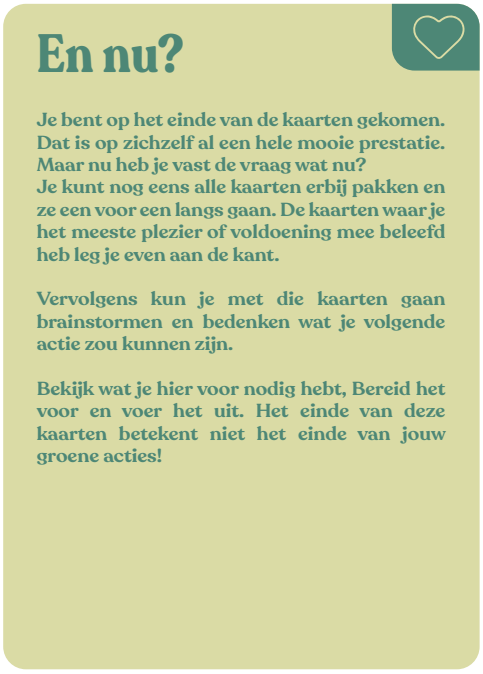
Appendix G

Growing the Movement cards

Frontside



Backside



All Roles

This reflection card is the final card of the deck. It invites to reflect back on the whole card set and find out which action was most appreciated.

The user is then invited to reflect on these chosen cards and figure out how they might perform similar actions after completing the deck.

Appendix H

Expert evaluation

Interview structure

Structure
Do you find the structure logical?
Do you think people will use the structure?

Guidance
Given your experience with other novice users, do you think the information is guiding enough?
Do you think the structure is an addition to this?

Incentive
Will the concept inspire beginners to take action ?
Ask about planning.
Ask about self-reflection.
Ask about markers.
Will the concept get interested citizens to join the expert's initiatiative?

Personalization
Is the wheel clear?
Does the role fit?
Do you think the sequences match the role?

Level of information
Does the concept help to educate and increase knowledge interested citizens?
What level is the information right now?
Does the concept help interested citizens understand the information needed to participate?

Social contact
Explain the ten ingredients and ask if they will work.

Long term commitment
Do you recognize the tactics to acquire ownership?
Do you think it will work?

After questions

Is the concept valuable for the initiative, and why?
Where do you see Growing the Movement add value to the organization?
Where and how would you use the concept?
What do you think of the intended use?

Appendix I

User evaluation

Observation focus

Structure
Do users follow structure?
Are cards used correctly?

Guidance
Do users get lost?
Is the order experienced logically?

Incentive
Ask if impact is inspiring to take action?
Would they use markers?
Ask about planning
Ask about self-reflection

Personalization
Is the wheel clear?
Does the role fit?

Level of information
Learn something new?
Want more information?

Social contact
Ask about social cohesion in the neighborhood.
Ask about strangers

Questions interview

Were all cards clear?
Do you now feel more like taking action? More than before the cards?
Do you think you would really execute the cards?
Do you feel that you now know more about biodiversity actions?
Did the information match you personally?

DESIGN FOR our future

TU Delft

IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy".
Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name: van Haelst
initials: T.T. given name: Tijmen
student number: 4307461
street & no.:
zipcode & city:
country:
phone:
email:

Your master programme (only select the options that apply to you):

IDE master(s): ( ) IPD (★) DfI ( ) SPD
2nd non-IDE master:
individual programme: - - (give date of approval)
honours programme: ( ) Honours Programme Master
specialisation / annotation: ( ) Medisign
( ) Tech. in Sustainable Design
( ) Entrepeneurship

SUPERVISORY TEAM **

Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair: Roy Bendor dept. / section: DCC
** mentor: Tomasz Jaskiewicz dept. / section: DCC
2nd mentor:
organisation:
city: Delft country: the Netherlands

comments (optional): Reason for two coaches from DCC: I wanted the project to take place in the public space and I wanted a coach with an architecture and urbanism background.

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

Second mentor only applies in case the assignment is hosted by an external organisation.

Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair _____ date - - signature _____

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair.
The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: 90 EC

Of which, taking the conditional requirements into account, can be part of the exam programme 90 EC

List of electives obtained before the third semester without approval of the BoE

★ YES all 1st year master courses passed

NO missing 1st year master courses are:

name _____ date - - signature _____

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **.
Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: ○ APPROVED ○ NOT APPROVED

Procedure: ○ APPROVED ○ NOT APPROVED

comments

name _____ date - - signature _____

Initials & Name T.T. van Haelst Student number 4307461

Title of Project The journey towards a more bio-diverse neighborhood.

The journey towards a more bio-diverse neighborhood. project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 09 - 06 - 2022 27 - 10 - 2022 end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Active citizen participation is something that is desired by the Dutch government because it encourages social cohesion, allows citizens to give input and overall improves the liveability of the city (Dutch government, 2022). There are, however, still many challenges and barriers for citizens to engage in or initiate bottom-up citizen initiatives (Slingerland et al., 2020).

Most municipalities, including Eindhoven, have a participation framework that is mostly optimized towards engaging citizens in top-down-initiated projects. Eindhoven is working with a memorandum on residents and government participation that helps civil servants to apply citizens participation to municipality projects and initiatives (gemeente Eindhoven, 2022). This top down approach invites citizens to participate but does not promote or support individual citizens to take bottom-up initiative action. This creates difficulties in involving and engaging interested but inactive citizens (De Koning et al., 2018). Many citizens don't even know that they have the opportunity to participate in city making. The people who do participate in bottom-up initiatives, “the usual suspects”, generally fall into the same social class and are often not representative of the entire neighborhood or district (Slingerland, 2020).

Inactive citizens, unrepresented residents, and the municipality structure, are just three of many obstacles within the citizens initiative landscape. The question that arises here: could design perhaps contribute to improving this landscape and help remove some of these obstacles? The methods of design are valuable for general complex problem solving of societal issues and have the ability to handle ill-defined' problems, ambiguity and uncertainty like these obstacles in the initiative landscape (De Koning et al., 2018). Therefore, the aim of this graduation is to gather an understanding of the citizens initiative landscape and how bottom up citizen initiatives can be supported by design.

Considering the time available for the thesis, the focus will be on biodiversity initiatives.
Rich biodiversity in cities is known to have positive effects on human health, and it has potential benefits for urban citizens at a local scale (Taylor & Hochuli, 2014). Currently biodiversity in cities is declining and citizen participation could be a great approach to address this. Citizens can be informed, supported and engaged to carry out many small-scale green initiatives to increase biodiversity. Eindhoven and its citizens currently don't yet manage to sufficiently support bottom up citizen participation like this. This is the gap I tend to address with this thesis.

During the project I will collaborate with Guerrilla Gardeners (GG). This is an already existing citizens initiative from Utrecht, that works towards transforming the urban landscape into a more environmentally friendly and biodiverse version of itself. The group is now expanding into Eindhoven, and this initiative will act as a case study which will be a first-hand experience of the citizens initiative landscape and allows the research and design to be applied. The explorations of the obstacle encounters and my personal experiences within this case study will allow me to gather extensive knowledge and translate this into an initiative playbook with guidelines for new initiators (see image #1).

GG will not act as a client as this gives me the freedom to organize the thesis according to my own wishes and create a playbook that is beneficial for the initiative landscape as a whole instead of just GG. That said, GG already has a lot of in-house knowledge which allows for a good foundation on which the case study can be built. In return GG will gain the knowledge of the addressed obstacle, they will be included in the playbook with references and they will be using the playbook for their initiative.

space available for images / figures on next page

introduction (continued): space for images

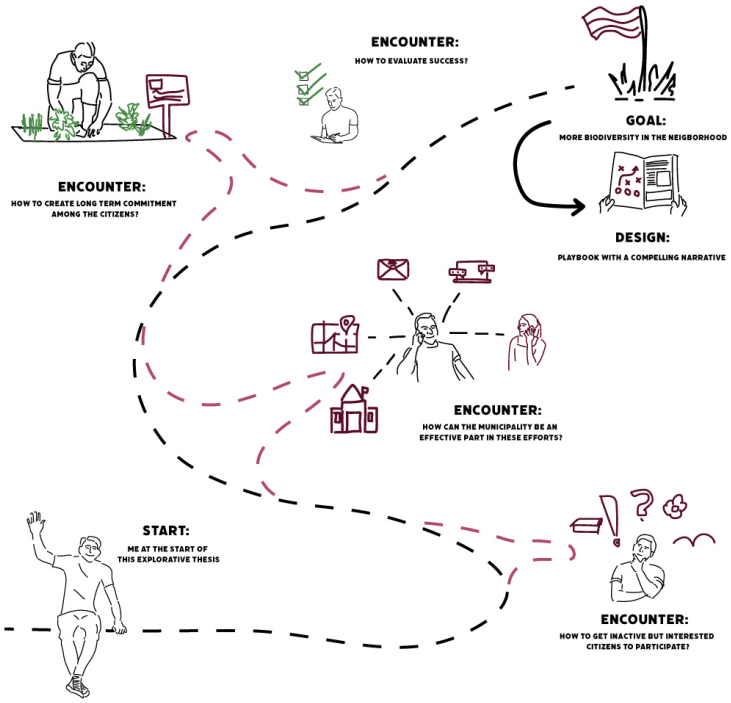


image / figure 1: Possible encounters during the phases of a biodiversity initiative.

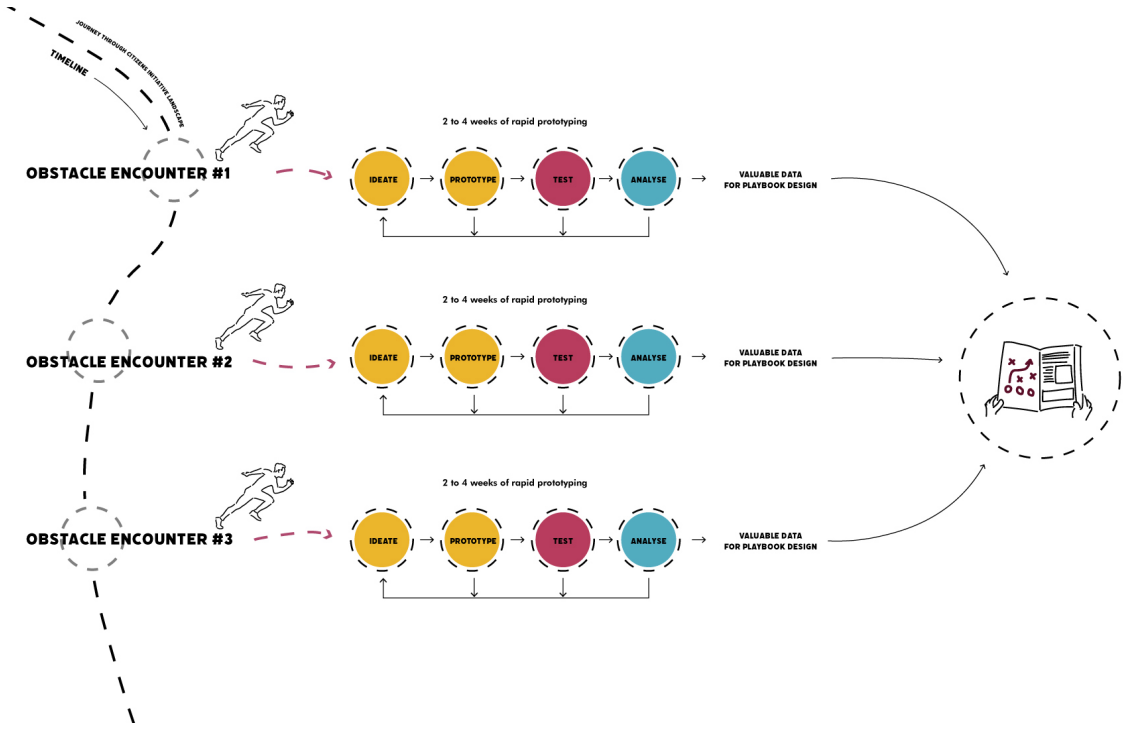


image / figure 2: The iterative design sprints for quick design experiments and data gathering.

Initials & Name T.T. van Haelst Student number 4307461

Title of Project The journey towards a more bio-diverse neighborhood.

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Any citizen-led initiative will encounter many obstacles. Initiatives start with initial enthusiasm but citizens can quickly be demotivated when the first obstacles arise (Slingerland, 2017). This can include obstacles such as a budget shortage, conflict with other initiators or neighbors, difficult communication with the municipality, etc.

Due to the many obstacles in the citizen participation landscape, successful bottom-up citizen initiatives are rare. At the moment, especially citizens who invest a lot of time and energy (and money) are present as active participation actors. A major incentive is needed for other citizens to participate as well.

It is striking that citizens encounter so many obstacles as both the municipality and the citizens themselves are enthusiastic about bottom-up citizen initiatives. There seems to be a mismatch between the two sides. The municipality seems like a bureaucratic machine that has difficulty letting go of a standardized framework which keeps them from supporting bottom-up initiatives (Koolen, 2022). On the other side, the citizens do not have a clear view of the city's responsibilities towards its residents and have a hard time understanding certain regulations (De Koning et al., 2018). It is difficult for either side to take on the other's perspective. As a result,both citizens and the municipality of Eindhoven presently lack the right knowledge, communication and/or tools to support and stimulate bottom-up initiatives that allow for easier implementation.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

"Help citizens in Eindhoven to collectively re-image their local environment and make it more biodiverse. For example by creating a "playbook" that will provide a strategic approach for new initiators to retrofit their environment more easily with tangible changes."

The goal of this project is to design an instrument that supports citizens to transform the neighborhood into a more environmentally friendly and biodiverse version of itself. Reaching this goal requires a "deep dive" into the citizen initiatives landscape.

I intend to chart and navigate the obstacles of the Eindhoven citizens participation landscape in a practical and experimental way. Desk research and interviews with actors of the citizens initiative landscape will help to map obstacles that are present. Specific encountered obstacles that are most appealing and interesting for new bottom-up initiators will be selected to address. Methods that may be used to address and explore these obstacles include literature research, interviews and quick prototyping and their evaluations. This will provide data that might, for example, form a compelling playbook.

The playbook should contain guidelines to new initiators or designers, and support them with a strategic approach to setting up a grassroot, biodiversity-enhancing initiative. Despite the fact that the playbook focuses on helping the citizens, it can also provide the municipality with insights of the citizens' perspective on bottom-up initiatives.

Initials & Name T.T. van Haelst Student number 4307461

Title of Project The journey towards a more bio-diverse neighborhood.

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 9 - 6 - 2022 27 - 10 - 2022 end date

Calender week	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
First day of the week	06-Jun	13-Jun	20-Jun	27-Jun	04-Jul	11-Jul	18-Jul	25-Jul	01-Aug	08-Aug	15-Aug	22-Aug	29-Aug	05-Sep	12-Sep	19-Sep	26-Sep	03-Oct	10-Oct	17-Oct	24-Oct
Project week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Essential events	**Kick-off**									**Midterm**		**Break**					**Green light**				**Gaduate**
Step 1 - Define and identified stakeholders.																					
Literature Study																					
Context analysis																					
Define stakeholders																					
Workshop/participation research																					
Reach out to stakeholders																					
Stakeholder warm up																					
Step 2 - Evaluate and identify issues																					
Initial ideation/Brainstorming of obstacles																					
Clustering data and Ideas																					
Validating concept direction with experts																					
Feedback workshop with stakeholders																					
Step 3 - Place vision and low fidelity prototyping																					
Prepare for testing concept direction																					
Test concept direction																					
Redefine based on results																					
Prototype																					
prepare for final feedback session																					
Validate final design																					
Redefine based on final validation session																					
Step 4 - Report																					
report																					
Prepare presentation																					
Touch up report																					
Future recommendations																					
Final presentation																					

The project will consist of 3 phases.

1. The first phase will focus on defining the citizens initiative landscape. Here I will create the scope of my project by literature research, defining design goals, methods and tools. Interviews with actors of the initiative landscape will also take place here.

2. This second phase focuses on obstacles that arise during the course of the Initiative. A fluid framework is needed because the obstacles that are identified will be addressed. Design sprints in combination with the iterative design process will provide this fluidity. The iterative design process will allow me to create, test, analyze, and refine ideas quickly. Rapid prototyping will allow me to gather useful data and involve stakeholders effectively (Eby, 2019). Every addressed obstacle can start a quick iterative design sprint of its own with the aim of answering research questions and gathering knowledge on that specific obstacle encounter. The diagram in Image #2 is an attempt to clarify this. I am aware that the sprints can be interconnected and that some obstacles need more time than others. The sprints therefore have a time scale that is flexible to support this adjustability.

3. The final phase will focus on refining the phases and combining them in something like a playbook. I plan on keeping my report updated every week and spend an hour typing insights and putting these in a document. The final presentation will be prepared during the last three weeks.

Initials & Name T.T. van Haelst Student number 4307461

Title of Project The journey towards a more bio-diverse neighborhood.

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... Stick to no more than five ambitions.

Ever since I started studying Design, my focus has been to make the world a better place overall. A rather vague and ambitious focus but as long as the right direction is there I am interested in it. That is why I chose to do an initiative project for this graduation. I truly think that participatory city making results in the creation of high quality public spaces that contribute to people's health, happiness, and wellbeing.
I have always been interested in social-cultural design issues and urbanism design cases
and the whole gray area between these two. By designing something that takes place in public space within this design scope, I think I am well placed in this area.
I have the feeling that my entire design career has slowly but surely worked towards a project like this. I once started with architecture and urbanism. There I already had the idea that the wishes of the user were not taken into account enough. Despite my love for Architecture and especially urbanism I decided to switch to DFI. It enabled me to work closer with the wishes of the people I design for. I think a project like that is the perfect manifestation of how I want to design and see my design career.
This project leaves a lot of space for me to educate myself. There are enough subjects I am vaguely familiar with and can enhance through this project. I will build upon my knowledge and grow as a designer.

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FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

Initials & Name T.T. van Haelst Student number 4307461

Title of Project The journey towards a more bio-diverse neighborhood.