TOWARDS AN INCLUSIVE AND CIRCULAR HUB

A communication approach that strengthens the relationship between residents and the circular center

Master Thesis

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HOW MIGHT WE STRENGTHEN THE RELATIONSHIP BETWEEN RESIDENTS AND THE HUB CIRCULAR CENTER SO THAT RESIDENTS ARE MORE INVOLVED IN CIRCULAR ACTIVITIES ?

PREFACE

Before reading this thesis, I would love to express my thoughts on my journey for the past six months. Without doubt I can say it has been one of the hardest projects I have ever finished. Finishing would not have worked without the support of my supervisors, friends, family and off course the residents in the HUB!

First of all I would like to thank my supervisory team: Ingrid Mulder and Marie Van den Berghe. They have been of great help in changing my view on the process of design. Ingrid, thank you for giving me the freedom to work independently and showing the value of the design as a process instead of only focussing too much on a solution. Marie, thank you for your constructive and concrete feedback every session we had. It has been a great guidance through this challenging project, keeping the focus on the most important aspects.

Marguerite Evenaar from Se.lab, a transition thinker with an enthousiastic mindset. I loved our flexible and informal way of working together. We were continously exploring the challenges and how we could make a valuable solution that would make residents a primary stakeholder. Our talks on the Theory of Change and transition in the Netherlands have opened my eyes on how to approach the design process but also the opportunities for design in the public environment.

I would also like to thank my my sister Ursula who helped me with my struggles and played my assistent for two of the co-creation sessions. It was fun to see someone not involved in design, enjoying the sessions and discussing challenges with residents.

I would also like to thank my roommate Marinke, I enjoyed our lively discussions on designing for municipalities. Thank you for the study sessions and after work session off course :).

Besides, I would like to thank Wouter for his support throughout my graduation and giving concrete feedback on my work. It helped me to look at my work from another perspective.

Last I would especially like to thank my family. It was because of my brother Isaac that I strarted studying Industrial design Engineering and untill today I do not regret that decision. Also I cannot express my immense gratititude towards my parents for giving me the opportunity to study at the TU Delft and being so involved with my studies. They were always ready to be interviewed or do a test for my projects throughout the years and loved to think along.

THANK YOU AND ENJOY THE READ!

JACOBA

EXECUTIVE SUMMARY

Current consumption and production patterns require drastic changes if we want to transition into a circular economy. Accordingly, the Dutch government has set up a nationwide programme that aims to achieve a completely circular economy by 2050 with an interim objective of a 50% reduction in raw materials by 2030. This includes creating a network of circular craft centers by 2030, places where product reuse and repair is of paramount importance.

The center for this project is located in the province of North-Holland, where municipalities Heiloo, Uitgeest and Bergen are working together on regional challenges in the 'BUCH' organisation. They aim to contribute with their own vision of such a center, The Circular HUB, whose success highly depends on the involvement of residents and their sustainable choices. This thesis aimed to discover how residents can be involved to visit the center and promote repair and reuse activities.

The challenge was approached by means of a triangulation method, a variety of methods to develop comprehensive understanding of problem context. Topics of waste, circular economy, behaviour change models and good practices on encouraging residents were explored together with other activities including resident interviews, co-creation sessions and surveys. These were used to identify the drivers and barriers of residents on circular activities and their perspective and needs on the center.

The obtained key insights are related to three tools of a behaviour change model, the SHIFT framework. Residents are not aware that even a seemingly small action can make a difference, lacking the knowledge or expertise (self-efficacy). Many are participating in repair and reuse practices and love to share their knowledge, but nothing is in place to make this visible to other non-active residents. This makes them unaware of what is possible and what the norm can be (social norms). These two factors can be explained by the current challenges on clear and consistent communication of the BUCH on the meaning of the circular center and circular activities to residents (tangibility). Consequently, residents do not feel involved and are not stimulated to participate on a regional level.

To address these challenges, a communication approach for the BUCH was developed. It aims to create support for key stakeholders of the climate programme to actively involve residents in activities as a preparation for the circular center. This to achieve a unifying vision for the circular center that is shared by all the stakeholders, including residents. The approach is delivered as a guide that consists of four elements that could be implemented:

The importance of communication in encouraging residents
The challenges in the BUCH context and how to deal with them
A strategic vision offering major milestones to take
A roadmap with actionable steps to achieve the vision

Each element can be used separately depending on the type of conversation context The solution contributes to the problem by offering support for the municipalities to involve residents in the communication so that they feel a sense of ownership and involvement on a local and regional level.
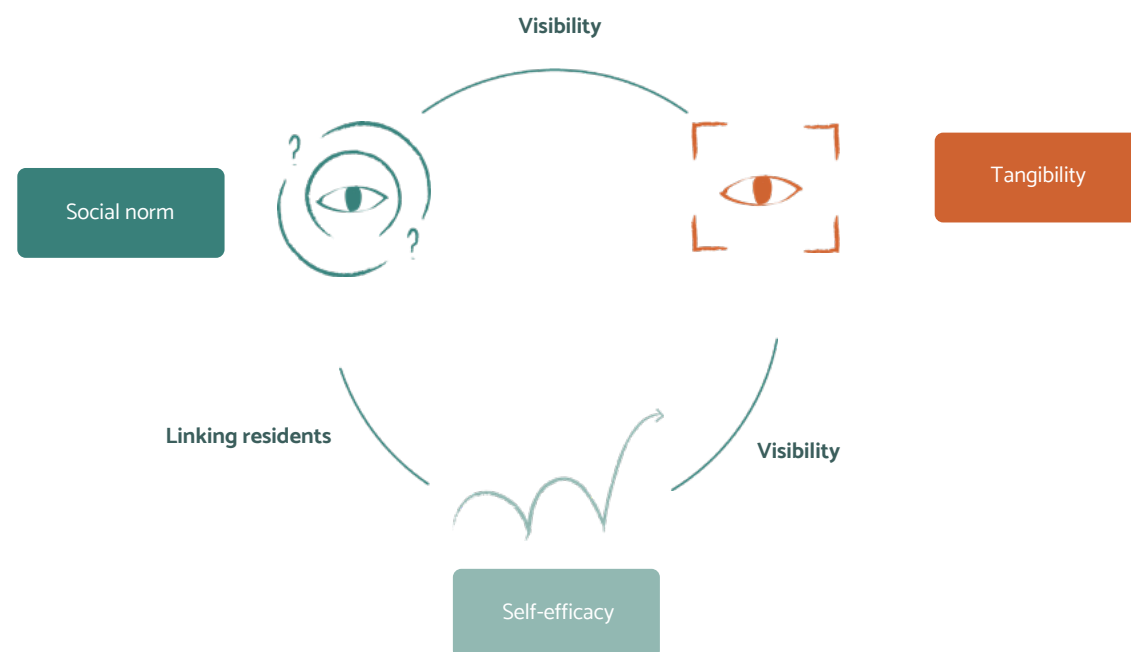
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READING GUIDE

Quotes

Take-aways

Take-aways, remarks and interesting thoughts are represented like this. They show the decision-making process and iterative questions throughtout the report.

PUTTING PIECES TOGETHER

Recap chapters
It describes key insights, thoughts and further directions to transfer from one design phase to another. It highlights the most important elements when moving forward.

BEHAVIOUR = motivation x capacity x opportunity

1. Mental
2. fysical
3. Financial
4. Material

Visual explanation of the behaviour of the residents
Throughout this thesis the sustainable behaviour of the residents is analysed and presented based on the Triade model of Poiesz (1999) above. The modelis frequently used to assess if a specific behaviour is present or lacking and on which factors the organisation can focus on to either improve the quality of current behaviour and realise new behaviour. Concluding parts will contain this model to give a graphical representation of the barriers and opportunities for behaviour change.

Motivation relates to wanting to perform the behaviour. It relates to the intention and interest a person has in the result of the behaviour. The second driver in the triade model is **capacity**, which is about the ability to perform the behaviour. Does the person posses the right qualities, skills, financial resources and instruments to engage in the behaviour? The last driver is the **opportunity** which relates to the degree the external factors foster or hinder the behaviour of the person. The interplay of these factors ultimately leads to behaviour and behavioural change. If one of these drivers are missing, the behaviour will not take place.

Definitions

A list of definitions are given that will frequently be mentioned throughout this report.

Circular economy	Ellen McArthur Foundation's Definition Of Circular Economy: "Looking beyond the current take-make-dispose extractive industrial model, a circular economy aims to redefine growth, focusing on positive society-wide benefits. It entails gradually decoupling economic activity from the consumption of finite resources and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. It is based on three principles: design out waste and pollution; keep products and materials in use; regenerate natural systems."
Recycling center	A recycling center is a location where residents can hand in their household bulky waste separately
Thrift store	A thrift store is an organisation where items can be donated that are then offered for sale in the store. A thrift store contributes to a better climate by giving discarded items the chance to be reused instead of ending up in the waste
Upcycling	The reuse or recycling of products or materials in such a way as to create a product of higher quality or value than the original. For example making a drinking glass from wine bottles.
Repair	Operation by which a faulty or broken product or component is returned back to a usable state to fulfil its intended use. (Ellen mcarthur foundation)
Reuse	The repeated use of a product or component for its intended purpose without significant modification

01 PROJECT INTRODUCTION

This first part introduces the scope and background of the thesis, how the project is approached to end with the goal and research questions to be answered.

1.1 Scope

Currently we are consuming 75% more resources than the earth can take. This model no longer works. The amount of resources we consume is set to increase by 70% by 2050 unless we make some major changes (Chrader-King & Liu, 2018). Therefore we have to look for new innovative ways that aim to make circularity the norm in society. To do so, concepts can be implemented to create new systems and services. However transitioning into a circular economy is not only a technical challenge but also a social one. Solutions are dependend on the active participation of residents, taking part in circulair activities and willing to think in a circular manner. Public policies on environmental issues can only be relevant and efficient when they involve the participation of all relevant residents (Delaunay belleville & Miller, 2020). The EU Circular Economy Action Plan also identifies citizen dialogues as a significant aspect in the circular economy transition. The choices of individuals account for the majority of global emissions. This is why they are the most important drivers of natural resource consumption (Järvinen et al., 2018). As a consequence the role of the residents cannot be underestimated. Still, this requires great effort and motivation from residents, which creates additional challenges for municipalities to transition into a circular economy.

For this reason the BUCH, the client in this thesis, reached out to the Participatory City Making Lab of the TU Delft. Three other graduation projects were conducted before this thesis. One researched how a circular network could be achieved with circular entrepreneurs. The other two focussed on participation practices in the BUCH and how residents could be stimulated to repair and reuse. This thesis specifically looks how residents could be involved in the development of a circular center in the BUCH. It **explores the impact that can be made on a regional level of the BUCH and its residents. The scope of the project focusses on the inner circle of the ecosystem map in figure 1. The intended impact of developing a circular center goes far further than this, the end goal is to minimize the amount of bulky waste and consequently the environmental impact on the planet. In order to reach such impact, actions by residents on a regional level are necessary to ensure that they can participate in the transition to a circular economy.**
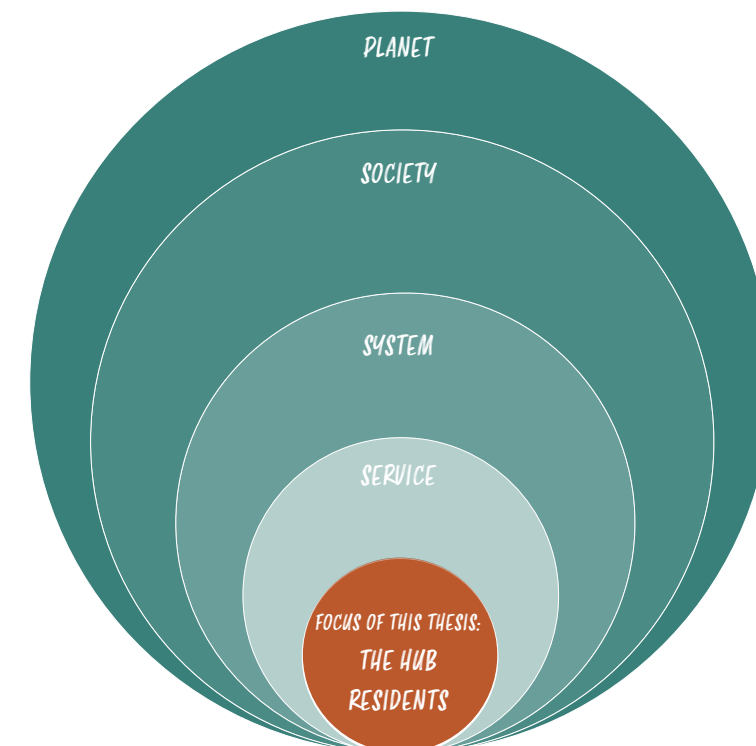
Figure 1: The intended impact of this thesis, focussing first on the residents
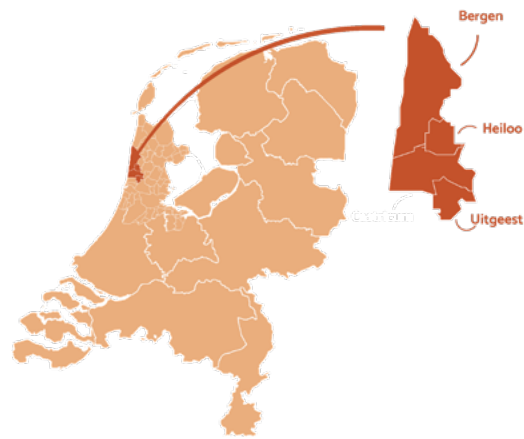
1.2 Project Background

Figure 2: The geographical location of the BUCH

The project takes place in the province North-Holland in the municipalities of Bergen, Heilloo and Uitgeest. In 2017, they formed a work organisation the BUCH. Joining forces and tackling common issues, were the main reasons to form the organisation. One of these challenges is reducing the amount of residual waste, more specifically bulky waste. The amount of bulky waste per person needs to be reduced drastically in order to achieve the goals set by the central government. In the implementation programme the Netherlands Circular in 2050 goals are formulated to achieve 50% reduction of primary raw materials in 2030 and in 2025 to reduce the amount of residueal waste per resident per year to 30kg, of which 5kg is bulky waste. Currently the amount of residual waste is on average 188 kg and 36kg respectively in 2020 (CBS, 2022).

During the project, Castricum pulled out of the agreement for the circular center. Therefore the municipality will no longer be mentioned in the report. The center is from now on called HUB circular center. However when refering to the organisation that is developing the circular center, the BUCH is mentioned.

Towards a circular center in the HUB

To tackle the above named goal, together the municipalities investigate the feasibility of a Circular Center. This is a concept invented by Rijkswaterstraat and is an ambition laid down in the Circular Economy Implementation Programme 2019 - 2023. The aim is **to have a national network of circular craft centers by 2030.** In 2019, Rijkswaterstaat launched a contest for municipalities in the Netherlands to share their vision and plan for their circular center. There is a need to develop a circular center because six of the current recycling centers current locations are greatly overvalued and no longer comply with the new laws and regulations. Not even with substantial investments. In addition, there is no room for recycling points or for possible facilities that can offer reuse repair and separation of raw materials.

The plan submitted by the BUCH has been assessed by an independent jury composed of members of the Ministry of Infrastructure and Water Management, Rijkswaterstaat, BKN, NVRD, Stichting Repair Café and the VNG. The focus of the HUB circular center is aimed at the visibility, participation and increasing awareness among residents. In addition the plan describes the ambition for close collaboration with educational entities. The combination of the design skills and knowledge and possible product ideas together with the commitment of other corporations resulted in the plan being in the top ten and was rewarded with subsidies for further development.

Their vision is as follows: The BUCH envisions a center that focuses on repair and reuse. It should be a vibrant place in the municipality where initiatives, residents, circular entrepreneurs, education, thrift store and repair all are in synergy. It should be a place that invites residents to think in a circular manner and see the value of products and resources by means of participation (BUCH, 2020). The circular center is based on 4 main building blocks that are crucial, also depicted in figure 3:

1. First reuse and repair refers to providing **a workplace** and deliver points for thrift stores, construction goods, repair activities and workshops.

2. Second the center should provide a workplace with **practical education** for all students to improve their skills and awareness.

3. Third the **social domains** refers to the collaboration with health organisations, NGO's to include people with a distance from the labour market. RREUSE, the European Network of social enterprises in reuse, repair and recycling, estimates that preparing for re-use of just 1% of municipal waste generated in Europe could help support 200,000 local green and inclusive jobs. (Interreg, 2021)

4. Last **circular entrepreneurship** refers to providing socio-economic activities around waste streams and their possibilities to stimulate reuse and repair.

The circular center is a project that is part of the circular economy pillar, one of the five pillars in the climate programme of the BUCH. For each of these pillars, the BUCH sets ambitions that they want to achieve together, the circular center being one of them.

Figure 3: Visualisation of the HUB and its relation to the climate programme of the BUCH

1.3 Main stakeholders of this thesis

Case solver

TUDelft

Participatory City Making Lab

The Ministry of Infrastrucutre and environment assigned the BUCH with a grant to develop a Circular Crafts Center.The project is defined and executed by the case solver the Particpatory City Making Lab, as a part of the TU Delft, represented by Jacoba Seminck. The student is graduating from the faculty of Industrial Design Engineering.

The Participatory City Making Lab (PCM Lab) is one of the Delft Design Labs at the faculty of Industrial Design Engineering. Each lab serves as a platform to cultivate design, science and innovation. It is a platform where students, staff members and external partners work together. The PCM lab aims at creating new frameworks that enhance participatory city-making. The lab sees the value of design in a transforming society to facilitate participation and design within societal challenges.The Participatory city making approach connects the current top-down initiatives with bottom up social innovation from a human centered perspective.

Fourth master graduation project on Circular Center

Circular Center project in the HUB municipalities

Project initator

Client

de BUCH

gemeente. BERGEN

gemeente UITGEEST

GEMEENTE HEILOO

The BUCH workorganisation serves as the client of this thesis. The BUCH reached out to the Participatory City Making Lab to work with students on the development of the Circular Crafts Center. For this thesis, Castricum (part of the BUCH will not be considered as the municipality are not actively involved any more in the development of the circular center).

Collaborator

se.lab
Social Enterprise Lab

Se lab is a social enterprise lab that helps the BUCH with setting up circular business models. Currently there are three other projects running with the school of Inholland to come up with different business models ideas. For my thesis I work closely with Marguerite Evenaar who helps the BUCH to research the degree of awareness among residents for repair and reuse activities and their role with the circular center.

Funding

Case owner

Rijkswaterstaat
Ministerie van Infrastructuur en Milieu

The Ministry of Infrastrucutre and environment assigned the BUCH with a grant to develop a Circular Crafts Center.

Legislation, directives and policies

1.4 Design Brief

The initial design brief that was created at the start of the thesis is decribed as follows. This thesis especially focuses on the relation between residents and the HUB circular center. Without participation of the residents, the circular center will face the risk of not being visited and viewed as a circular hub.

Challenges to involve residents relate to the current consumptions patterns. Nowadays we are floaded with products that are cheap and easily available, which makes us less conscious on the impact is has on the evironment. It is therefore important to look closely at individual lifestyles of people and how we can change there current way of thinking about products and waste. This **involves changing people's behaviours and circular thinking. It still remains a challenge because people experience personal barriers that they have to overcome in order to act sustainable.** Sustainability is often a concept that can seem psychologically distant, abstract and difficult for consumers to grasp. For many people in the Netherlands, sustainability is perceived as something that is expensive and difficult (No waste challenge, 2021). There are still challenges to overcome in making consumers aware on their behaviour so that they can start taking steps towards more sustainable actions.

This thesis is trying to contribute to the previous named challenges by discovering the barriers and opportunities in the BUCH context. The challenge lies in connecting people (the local residents) with the HUB circular center and determining what this relationship could be.

To design an effective intervention it is important to understand how the residents view a circular center and what their values and problems or concerns are in relation to this. By identifying the main barriers and motives of participating in circular practices, interventions can be designed that enhance the relation between residents and the HUB circular center.

The designed intervention (s) will engage local residents to visit the BUCH center. As a result, more awareness will be created around the circular economy and circular disposal of household goods.The following main research questions will be answered and are presented in figure 4 below.

RQ2: How will the RELATIONSHIP between the center and residents look like?

HUB RESIDENTS

RQ3: How can a DESIGN INTERVENTION be created in order to enhance the defined relationship?

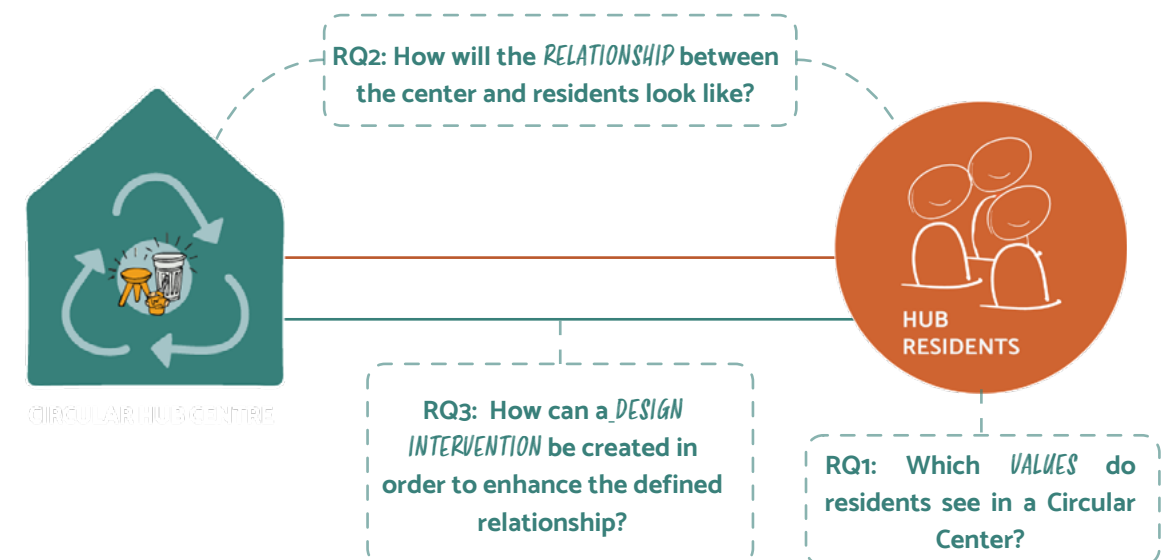**RQ1: Which VALUES do residents see in a Circular Center?**

Figure 4: the core outline of this thesis

1.5 Project Approach

The project follows the double diamond process (Design Council, 2005) with a focus on the bottom up approach from a human-centered design perspective. This means adressing the project in a practical and iterative manner, putting the residents in the HUB at the center of the design process. The process is divided into four main phases: discover, define, develop and deliver. During the different phases, design methods retrieved from design thinking (Delft Design Guide), human-centered design (designkit.org) and generative design research (Convivial Toolbox) are used. In each phase, the human perspective is considered. Residents are consulted and actively involved in different stages of the process. User understanding is gathered based on quantitative data, qualitative understanding and direct interaction. With this type of research you have to take into account that people themselves do not always know exactly what the causes of their behaviour are. Therefore a triangulation method is chosen which consists of a variaty of methods to develop comprehensive understading of the current behaviour and problems involved.

In the *DISCOVER* phase, the goal is to determine the baseline situation, overall picture and possible underlying cause of people not participating in repair and reuse activities. This is done through literature review, field visits, survey, co-creation sessions and interviews.The discover phase is split up into two chapters, namely the context (understand) and the people (empathize). The context describes the literature review conducted and the people describe the input of people received throughout the discovery phase.

> *Methods/ approaches used in this phase include: Contextmapping, interviews and questionnaires*

In the *DEFINE* phase, the insights from the discovery phase are gathered and narrowed down to define themes and clarify the challenge to be solved on the basis of the report in a problem definition. A future vision is created to explore the envisioned relationship between residents and the circular center. This to define the challenge and identify opportunities to design for. The design challenge describes the problem to be solved, related design statement and intended impact to aim for.

> *Methods/ approaches used in this phase include: future visioning, problem definition, list of requirements*

In the *DEVELOPMENT* phase, viable solution directions are explored and choosen based on the guidance of the design challenge to be solved. This phase follows an iterative approach, discussing findings with involved stakeholders to come to the best solution direction to explore further. The insights from these activities resulted in a more targeted solution that adresses the root cause of the problem, namely a guide for key stakeholders within the climate programme on how to create activities in collaboration with residents.

> *Methods / approaches used in this phase include: inventory and intuitive heuristics of the Creative Problem Solving approach, brainstorm*

In the *DELIVER* phase element of and the final design are validated with stakeholer to assess the viability, desirability and feasabilty. An additional creative session with residents and interview with communication advisor and internal evaluation session are perfomred to receive further input on improvements to be made.

> *Methods/approaches used in this phase include: Design roadmapping, Product concept evaluation*
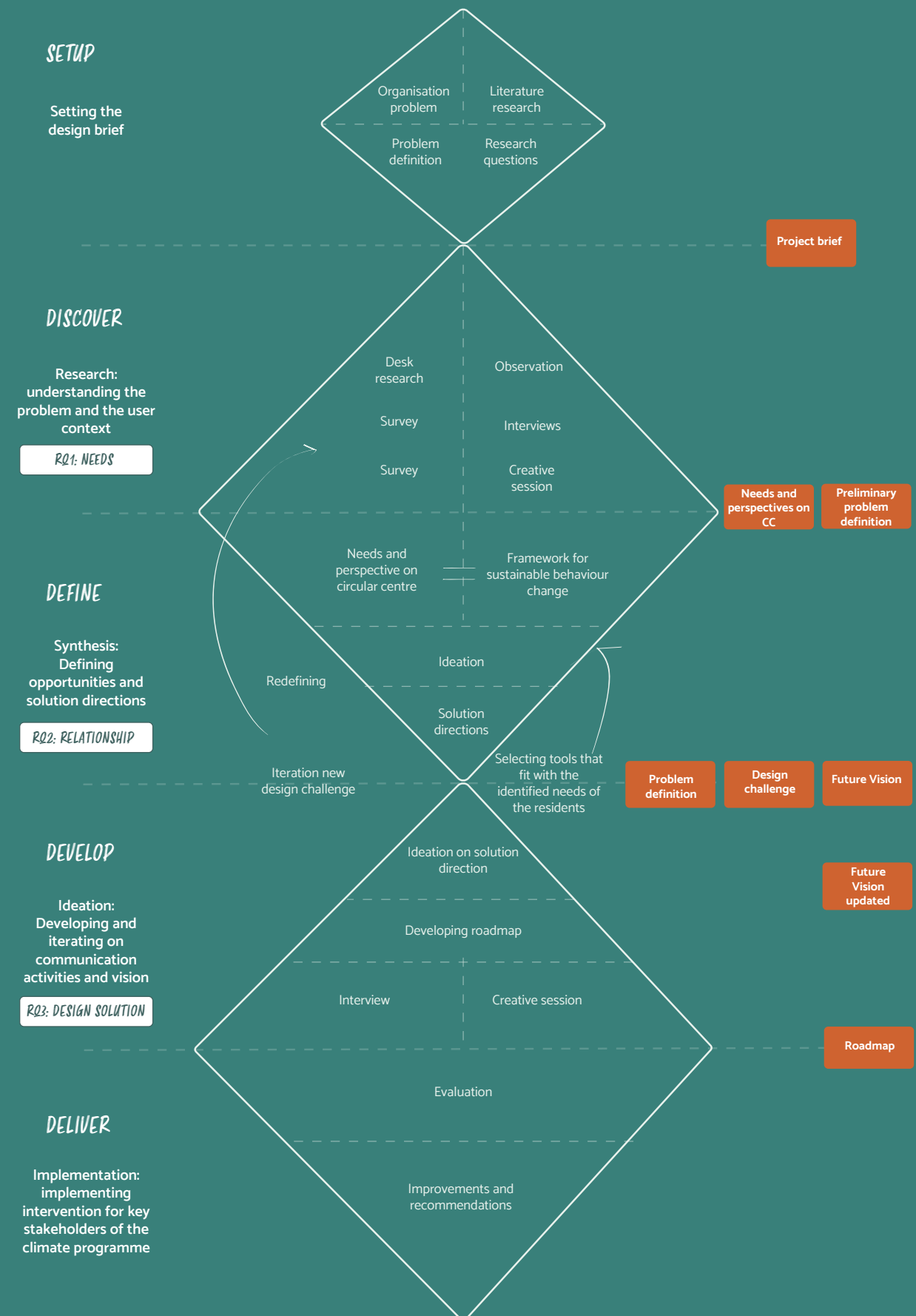
Figure 5: Project approach

DISCOVER

In the discover phase, the goal is to determine the baseline situation, overall picture and possible underlying causes of people not participating in repair and reuse activities. In addition, this phase tries to answer RQ1 by uncovering the perspectives of residents on the circular center and what values they would love to see. This is done through literature review, field visits, two surveys, a co-creation session and by interviews. The discover phase is split up into two chapters.

UNDERSTANDING THE CONTEXT:
Chapter 02 describes the context of the BUCH in transition to a circular economy and the challenges and opportunities that comes with this.

EMPATHIZING WITH RESIDENTS:
Chapter 03 describes the input of residents received throughout the discovery phase. On the one hand discovering their view on circular activities, analysing their current behaviour of repair and reuse. On the other hand discovering their perspective on the circular center, analysing their needs and wishes.

02 PROBLEM CONTEXT

This chapter provides an overview of the problem context of repair and reuse practices and circular centers in a circular economy in the Netherlands and abroad. It introduces the context of a circular economy in general and in the Netherlands in relation to the BUCH. Throughout the exploration of each section, knowledge gaps are identified.

Introduction

In this chapter the problem context of the project is explored to understand the current landscape in which the circular center takes place. For this, the current situation of the circular economy and the related impact on the BUCH muncipality is analysed to verify where they are now compared to the goals set by the dutch government. Furthermore current trends and developments in relation to other circular centers in the Netherlands and other examples abroad are discovered to find good practices and what elements contribute to their success. Sustainable change is only possible with the active involvement of the residents. Therefiore a closer look has been taken on sustainable behaviour strategies and models to find barriers and opposrtunities in adopting a sustainable lifestyle. All these actions made it possible to identify possible determants for success that can be further used in the design process. Due to the iterative nature of this thesis, a combination of outcomes of the literature review and interviews with an expert and residents are presented in this chapter.

2.1 Introduction to a circular economy

Current situation

According to the Global footprint Network, we are already consuming 75% more resources than the earth can sustain in the long term, when the Earth's natural capacity for extraction and absorption of waste are taken into account. The amount of resources we consume is set to increase by 70% by 2050 unless we make some major changes (Chrader-King & Liu, 2018).

> *Every year we dump a massive 2.12 billion tonnes of waste on the planet. 99% of the stuff we buy is trashed within six months. If all this waste was put on trucks, they would stretch around the world 24 times (No waste challenge, 2021).*

More and more people are pushing for change. The current disposable culture that is a burden on the environment and a transition towards a carbon-neutral circular economy needs to be made (Järvinen et al., 2018). We have to go beyond the current 'take-make-waste' model of the linear economy and aim for more sustainable and restorative alternatives. A circular economy is about recreating value across different cycles of products. It is restorative and regenerative by design. Waste is prevented by reusing raw materials in closed circles, as shown in figure 6.
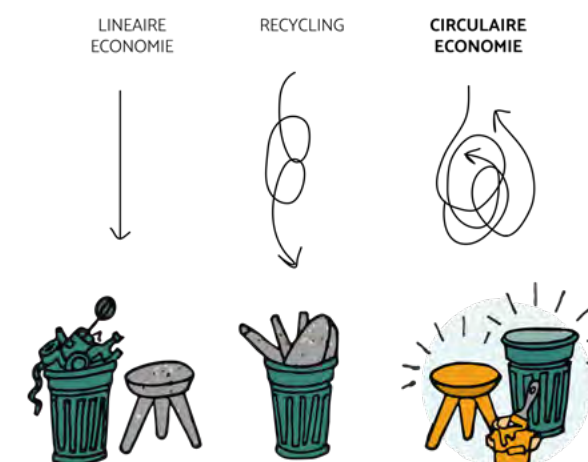
Figure 6: Towards a circular economy (Schiedam, 2020)

Strategies to reduce waste

In figure 7 the emissions of an average dutch household per year is depicted. What might suprise many is that the category of buying clothing and products takes up the highest amount of Co2 emissions. The environmental impact related to the consumption and production of these goods cannot be overseen (Waterstaat, 2021). Many discarded products are being separated and recycled but still half of the mass goes to waste because it ends up in a landfill or is incinerated (Dijksma & Kamp, 2016). Therefore it is valuable to focus on creating impact related to consumer goods. That requires a new way of thinking about waste of product and what we can do with this. As a result focusing on strategies that reduces the environmental impact of clothing and products is crucial. The circular crafts centers focus on this category, aiming to reduce the amount of household waste, specifically residual and bulky waste.
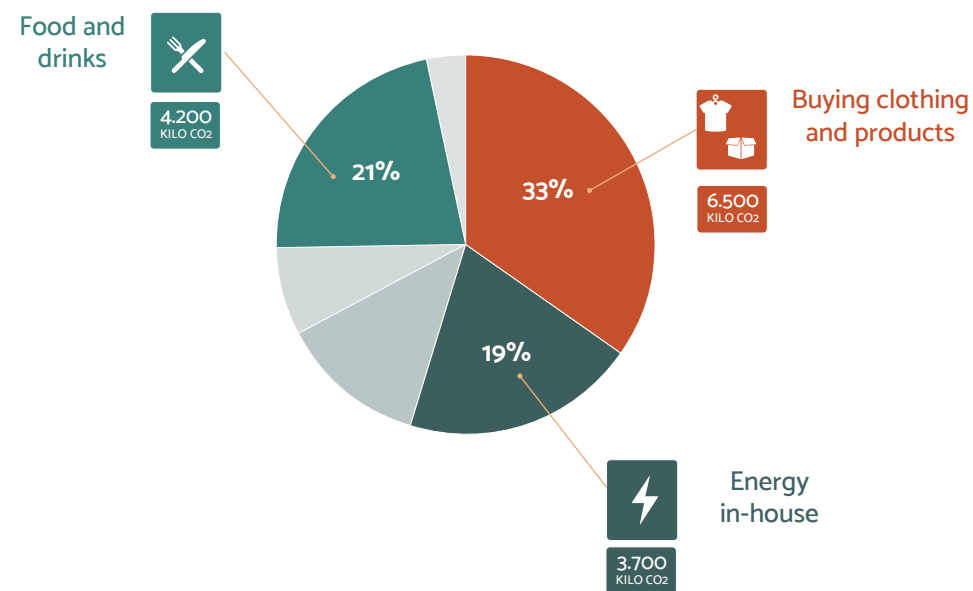
Figure 7: CO2 emissions per average dutch household (Milieu Centraal, 2021)

In many national policy documents around the world, the "R -ladder" is used to rank and prioritize strategies towards a circular economy. The higher on the ladder, the more circular a strategy is. Depending on the country, definitions and number of R's and the order vary. To avoid this confusion and stimulate a common language, The Ellen MacArthur Foundation in collaboration with IKEA published a glossary that includes definitions for commonly-used terms (McArthur Foundation, 2021). Several strategies can be applied to reduce the amount of bulky waste. While we can focus on redesigning the entire system over the long term, we can also make an immediate impact by focusing on strategies that extend the life of products and stimulate responsible consumption.That can be done by for example reparing, reusing products and reducing the amount you buy, shown on top of the ladder in figure 8. These strategies can also be used to integrate with new business models to step awat from the linear 'take-make-use and waste' economy, shown in figure 9. **The circular centers aim to focus on the use phase where activities of repair, re-use and refurbish take place.** Recycling and composting on the other hand are helpful but should still be limited as they often destroy some value or lower quality of resources

The greatest environmental benefit is expected from strategies that focus on reducing the total use of raw materials (narrowing the loop) and extending the life of products and parts (slowing the loop). To date, these strategies have received hardly any attention (Rijkswaterstraat,2021). **That is why the development of the circular crafts centers are so important in decreasing the amount of waste and keeping products in the loop. The BUCH recognises this aspect and want to make it work and this thesis coud help them in moving one step closer to actual realisation.**
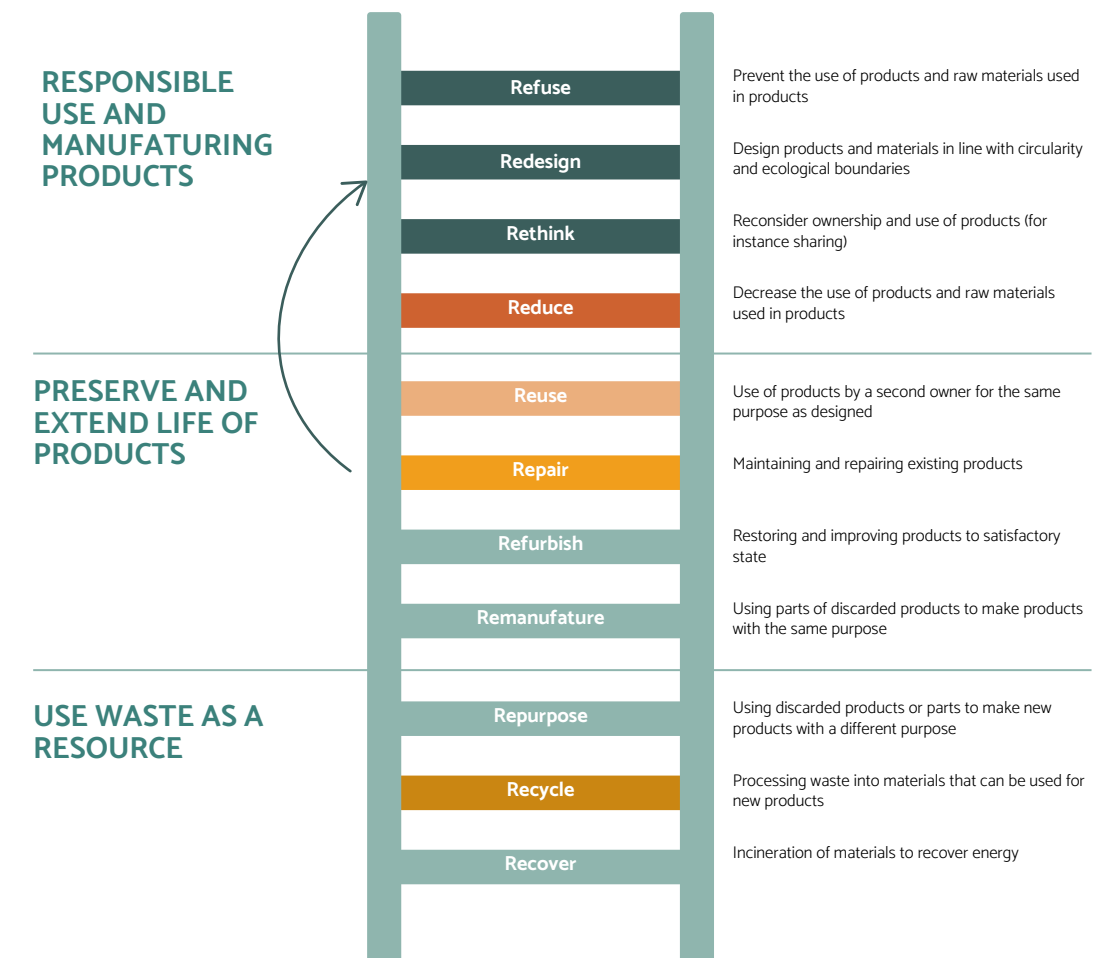
Figure 8: The R-ladder as an instrument for policy makers adapted from (No waste challenge, 2021)

Figure 9: Circular business loops adapted from (The Board of Innovation, 2022)

2.2 A closer look at the BUCH workorganisation

Context

Since 2017, Bergen, Uitgeest and Heiloo have joined forces to increase the living environment and the quality of their inhabitants, for new initiatives and cost savings/effectiveness. The four municipalities have a total of about 101,000 inhabitants. Each municipality has several residences: Bergen (7), Uitgeest (1) and Heiloo (1) (de BUCH, n.d). **There is not only lots of diversity between the different municipalities but also on a local le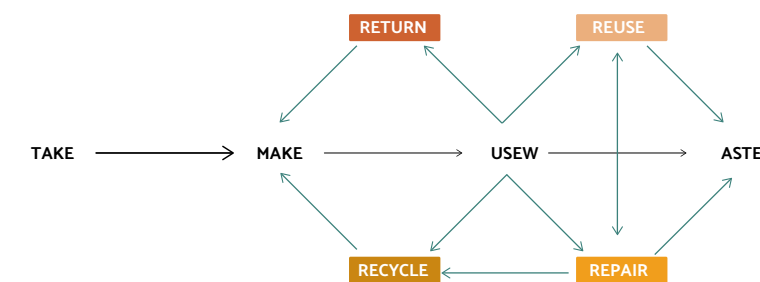vel. In Bergen the seven residences all differ from each other. The diversity of the population can influence the impact of the HUB circular center**. The area is most famous for dunes and beaches and therefore makes it a popular tourist destination. Some residents of the area work in Amsterdam and live in one of the municipalities. They have another dynamic and do not want to be actively involved in the municipality's activities. Most of the population in the Netherlands is between the age of 45 and 65 years (28%). In the BUCH municipalities this percentage is higher, 31% and 30%. The average income of each BUCH municipality belongs in the top 100 highest average income per residents in the Netherlands. Bergen on 22 from the 352 of which information is available with €31.700, Heiloo on 27 with €31.300, and Uitgeest on 63 with €29.300 bruto per year (AlleCijfers, 2021).

From the amount of residents, All the municipalities have on average 44% of the household composition. The largest municipality with 36.084 residents is Castricum, followed by Bergen, Heiloo and Uitgeest with 29.636, 24.146, 13.633 residents respectively.

THE HUB NEEDS TO BE A PARTICIPATING GOVERNMENT

In 2015, the decentralization of certain responsibilities of the national government led to a shift in tasks and role of the municipalities (Meijer & Straathof, 2020). This means different role conception: namely The BUCH must be a participating government (Kelders et al., 2018). The aim of the BUCH is to 'be a participatory governmental body that facilitates and or stimulates self-governance and a self-creating society's (Kelders et al., 2018). **They want to be among the best service providers in the Netherlands that are fast, knowledgeable and reliable. Therefore the BUCH organizes the services close to the residents, institutions, organisations and companies. Their motto reflects this: 'be the inhabitant'.** Reaching the residents is done via the local municipal council and the area director. The directors form a link between the residents and the organisation.

Since the merge of the municipalities, the function of area directors has been added. They form a link between the residents and the BUCH organisation. The aim is about involving the residents in policy-making. Intrestingly, some of the area directors do not actually live in the municipality themselves to avoid conflict of interest. In Heiloo, residents are positive about the fact that the area director visited them, talked to them face to face and then took steps to investigate and solve the problem.

> "This means a different view of the role: namely The BUCH must be a participating government"
> (Kelders et al., 2018)

Participation in the HUB

WHAT DOES PARTICIPATION MEAN

To dive into the participation practices of the BUCH, it is important to illustrate what citizen participation actually means and what principles it entails. When it comes to social and environmental issues, enabling residents to participate in the field of public actions is one of today's major challenges (Delaunay belleville & Miller, 2020). In order for public action to be more civic-minded, the CECI (Citizen involvement in Circular Economy Implementation) suggested developing actions based on the following 5 principles in figure 10. The CECI aims at transferring knowledge among European regions to bring more relevant and efficient policies to promote citizen involvement in circular and sharing economy. Residents engagement is vital because public policies on environmental concerns can only be relevant when they involve the participation of all relevant residents. The benefits when having stronger residents engagement are the following:

- Residents need to be able to **trust** the institutions in their environment so that they can have a **feeling of belonging and of having shared responsibilities**
- Residents can **actively take par**t in public policies in different ways and on different levels
- Residents **can take initiatives** in both the public and private sphere, on social, environmental and economic issues
- Institutions can have access to **better bottum-up information**

5 PRINCIPLES OF RESIDENTS PARTICIPATION

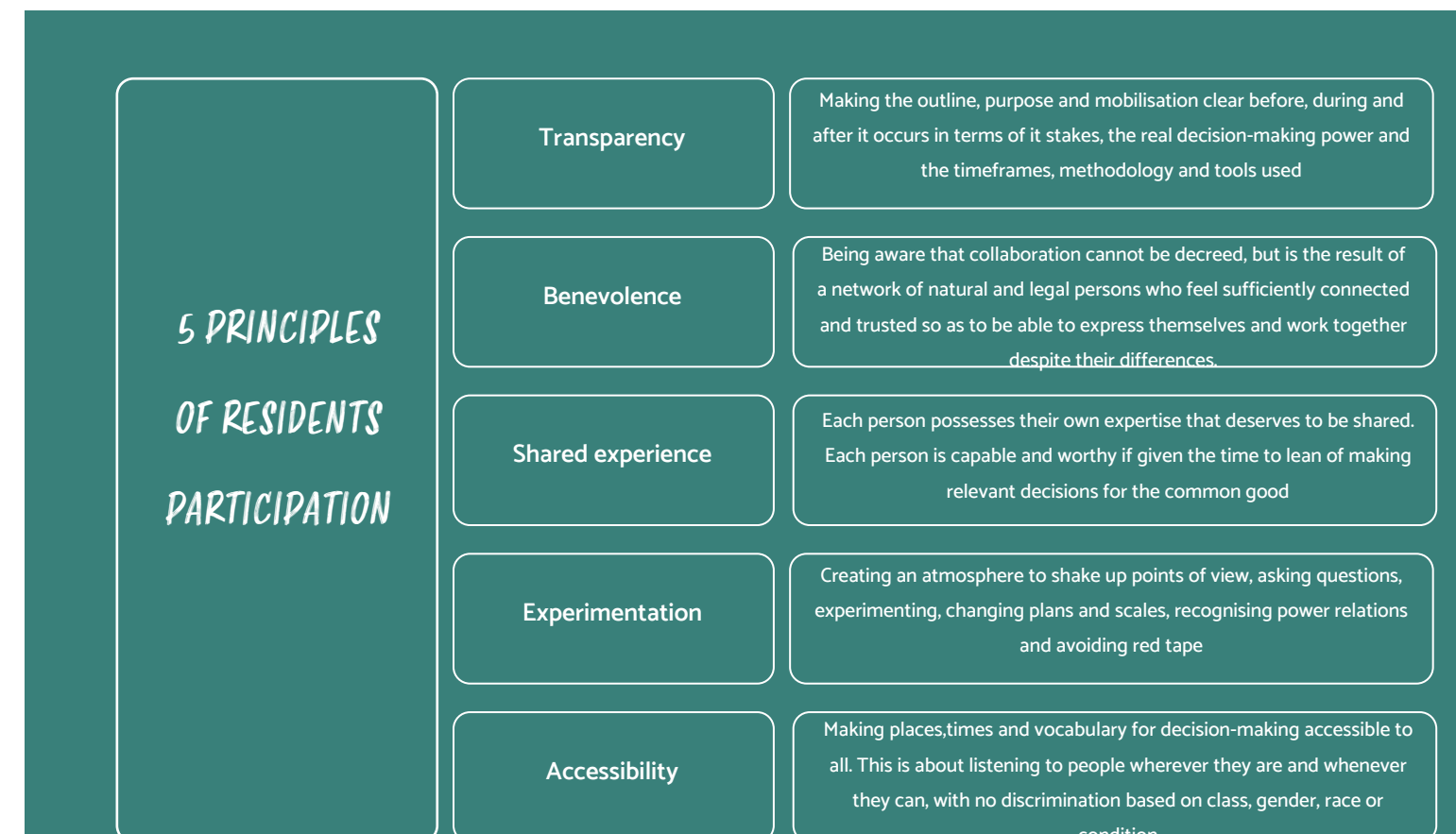| Transparency | Making the outline, purpose and mobilisation clear before, during and after it occurs in terms of it stakes, the real decision-making power and the timeframes, methodology and tools used |
Benevolence	Being aware that collaboration cannot be decreed, but is the result of a network of natural and legal persons who feel sufficiently connected and trusted so as to be able to express themselves and work together despite their differences.
Shared experience	Each person possesses their own expertise that deserves to be shared. Each person is capable and worthy if given the time to lean of making relevant decisions for the common good
Experimentation	Creating an atmosphere to shake up points of view, asking questions, experimenting, changing plans and scales, recognising power relations and avoiding red tape
Accessibility	Making places,times and vocabulary for decision-making accessible to all. This is about listening to people wherever they are and whenever they can, with no discrimination based on class, gender, race or condition

Figure 10: the five principles of citizen particpation, adapted from (ceci, 2020)

WHAT CAN BE IMPROVED

In order to gain insight into the strengths and weaknesses of municipal performance, the municipality conducted a 'Waarstaatjegemeente' study in collaboration with I&O Research (van Straaten & Conradie , 2021).
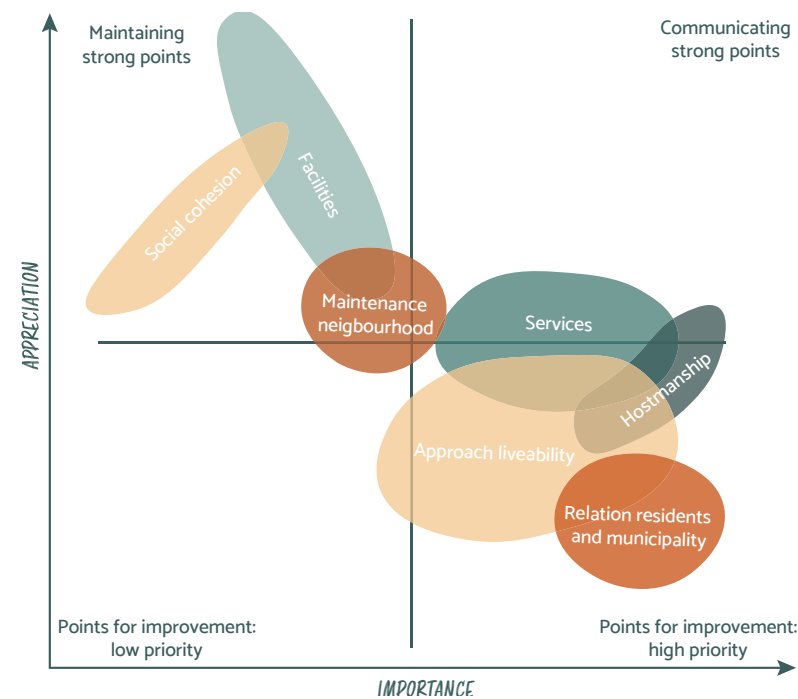

Figure 11: Priority matrix for the BUCH (van Straaten & Conradie , 2021)

Figure 11 shows that aspects relating to the relationship between citizen and municipality, the services and hostmanship of the municipality and the approach to quality of life have the most influence on the total appreciation of inhabitants. The buch scores more positively than national average on the liveability. People who live in one of the buch municipalities enjoy it and also appreciate this with a good 8 on average. There is a strong social cohesion for all BUCH municipalities.

In general, residents are less satisfied with the extent to which the municipality involves residents when tackling quality of life, facilitates participation and support with neighbour initiatives. Residents do not get enough freedom to realise new ideas and initiatives. **Residents feel that the municipality does not listen to them enough**. In the municipality of Heiloo this has remained the most stable and residents are only less satisfied with the degree of support for neighbourhood initiatives in the field of quality of life. When it comes to trust in municipal government, Heiloo gives the highest score. **The other 3 municipalities score lower than nationally.**

Residents also have the idea that the municipality involves its residents less well and facilitates participation less well than in 2019. The way and extent to which residents are involved in participation also plays a role in this. **Key aspect is offering clear accessible and transparent information to residents to foster the feeling that the municipality does what it says and residents feel more connected with the policy. An interactive approach to this helps residents feel heard.**

PARTICIPATION PRACTICES IN THE BUCH

Each of the BUCH municipalities have a central platform that contains the initiatives and projects of the municipality, for example (www.ikdenkmeeoverbergen.nl). the platform gives residents the possibility to think along with future plans. Residents can give their opinion on current topics and that allows them to participate in the policy making process. There is a residents panel where residents can participate in voluntarily to discuss current topics and themes and potential solutions. The website functions as a way to consult and record responses from residents. The panel goes a bit further and is a way to consult residents where they can be an advisor to current policy problems. **You can only see the current projects but not the impact and follow-up of previous ones. There is no gereral platform on a regional level, which makes communication on a regional level for the circular center more difficult as the current focus is on a local level.** Another element that is equal for the four is the function of the area director which has been described on the previous page.

There are several projects in the BUCH that involve active participation of the residents. An overview can be found in appendix B5. **The projects show that residents are willing to contribute to their municipality and share ideas.** Interactive approaches that give residents the freedom to share their ideas works well. In an example of Bergen the residents' view on the municipality changed from 'ús' to 'together'. Another example in Uitgeest shows that **when residents are the ones starting the project and maintaining it, a greater feeling of responsibility can be achieved.** In uitgeest the milieutuin was created 40 years ago by an enthusiastic citizen that wanted to improve and bring people in closer contact with nature. Besides focusing on growing environmentally friendly vegetables, fruits and flowers, the garden serves as a meeting place for people. In an interview with a resident from Uitgeest (appendix C6), **the need for social contact and collectivism has grown heavily over the years.**

"The togetherness and conviviality is of paramount importance to the people."

Resident Uitgeest

Figure 12: Examples of the community garden in Uitgeest

CONCLUSIONS CIRCULAR ECONOMY IN THE HUB

The context in which the circular center takes place is that of three separate municipalities working together as the BUCH organisation. When researching the context several conclusions can be made on the participation practices in the HUB and its relation with the circular center. These conclusions are intresting to keep in mind throughout the discover phase to find knowledge gaps and opportunities.

Firstly, it seems that the platforms currently in place to involve residents do not have the right impact to let residents feel connected on a regional level. The platforms are directed to each municipality separately with different messages. As a result, confusion could exist on the efficiency of the BUCH organisation. On the contrary, an interview a resident from Uitgeest showed that residents are willing to contribute to their municipality and share ideas. From this the need for social contact and collectivism emerged as residents in Uitgeest.
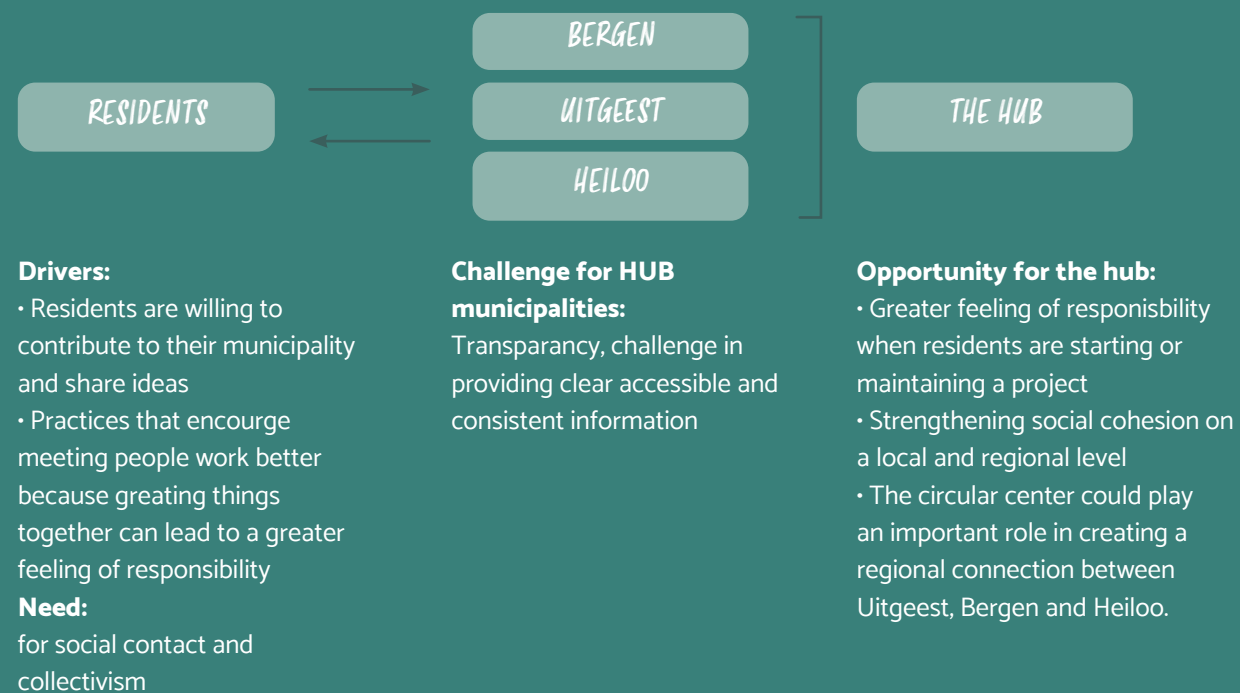
Secondly, transparency seems a challenge. Residents do not feel that the municipality is listening to them and does what is says. This might result in less trust in the BUCH. It relates to the transparancy principle of citizen participation and indicates that the BUCH can improve their relation with residents. The BUCH'S motto: 'be the inhabitant' is not yet reflected in the perspectives of the residents. According to the survey Uitgeest Bergen and Castricum score lower than nationally. A way to overcome this is by offering clear accessible and transparent information to residents to foster the feeling that the municipality does what it says and residents feel more connected with the policy on a regional level. Staying true to their core values is key: space, listening, dialogue and working from outside in (Meijer & Straathof, 2020). An interactive approach to this helps residents feel heard. Getting the residents on board with the circular story and giving them a clear direction to focus on is a major step in accomplishing a circular center that will be visited and used.

Thridly, the circular center could be a tool for the HUB to show that they want to change together and making the buch a place where circular initiatives and ideas can thrive while actively listening to the residents. However this involves setting aside political considerations that might hinder this cooperative thinking.

Finally, the researched trends show opportunities for the HUB to strengthen the social cohesion locally but also on a regional level to foster a community feeling where each citizen can relate to. Currently that aspect remains still a challenge because residents do not feel heard enough and listened to in the HUB.

All these previously named conlusions are about the relation between the HUB and its residents. There is still a challenge for the HUB in actively involving residents. To find out why this is the case, the next part will uncover whether residents actually do think this as well and if they can relate to the regional BUCH workorganisation.

RESIDENTS		BERGEN		THE HUB
	→	UITGEEST		
	←	HEILOO		

Drivers:
· Residents are willing to contribute to their municipality and share ideas
· Practices that encourge meeting people work better because greating things together can lead to a greater feeling of responsibility
Need:
for social contact and collectivism

Challenge for HUB municipalities:
Transparancy, challenge in providing clear accessible and consistent information

Opportunity for the hub:
· Greater feeling of responisbility when residents are starting or maintaining a project
· Strengthening social cohesion on a local and regional level
· The circular center could play an important role in creating a regional connection between Uitgeest, Bergen and Heiloo.

2.3 Activation and motivation of residents

It is crucial to research why and how residents can be motivated towards a more sustainable lifestyle in order to find opportunities for the HUB to stimulate involvement with the circular center. Transitioning into a circular economy not only requires legislation but also behaviour interventions so that residents can be stimulated to participate in the circular economy (Glas, 2020). Sustainable consumption behaviour and circular thinking should be the new norm. However changing behaviour is not as easy as it sounds. Residents and companies are not always aware of the importance of the role they play in preserving the high-quality use of products and materials. Everyday choices, whether conscious or unconscious, affect the demand for products and materials, and their discarding after use. Therefore this chapter explores different models and ways to trigger residents involvement in a circular economy. As a result, most important factors that can influence repair and reuse activities are selected.

Figure 13: Four pillars for an attractive community

1. CREATING A STRONG IDENTITY
2. PROVIDING LEARNING ACTIVITIES
3. CONNECTING ISSUES AND STAKEHOLDERS
4. REWARDING SENSATIONS

Creating attractive communities by triggering Citizen involvement

A way to engage different residents to take action for a common goal, in this case reducing waste, can be fostered by creating attractive citizen communities. A paper published for the Citizen Involvement in circular Economy Implementation was reviewed to find the characteristics of a community. CECI is a project funded by interreg Europe, a policy learning platform for authorities. The following definition was found: 'Communities are formed by groups of people unified by joint vision or circumstances taking collective actions for a common goal. They go beyond ordinary networks and connections in order to reach collective aims and impacts.' (Delaunay belleville & Miller, 2020). There are four pillars to create an attractive community, described below. These are actually the backbones of what the circular center needs to be, so they are vital to consider wheather the HUB can emphasise more on one of these elements for the circular center.

1. *A STRONG IDENTITIY* is needed to make people want to be part of the club. **Branding plays an important role here because it must convey the mission, atmosphere and values via appropriate names, visuals and keywords**. For the HUB CC a clear communication about what a circular center is and could be is not yet developed or communicated to the residents. Throughout the course of this thesis the BUCH has used different names of the center to communicate to the residents, namely circular center and circular crafts center. That could and will be confusing for residents because they do not receive consequent and congruent information about something that does not exist yet.

2. *LEARNING ACTIVITIES* **Having a clear vision of the different positions, training and opportunities you can offer residents is vital**. People often join a community with the aim of learning hard and soft skills that they will use in their personal and professional life. For the HUB CC there are ideas on circular business models and possible involved stakeholders but there is not yet a clear outline of what residents would want in the circular center in terms of learning activities and other elements.

3. *CONNECTING ISSUES AND STAKEHOLDERS* Ensuring a safe space for everybody by setting the right frame from the beginning. A community can be a great tool **to connect different issues and stakeholders who can share similar hopes and goals**. For the BUCH CC different stakeholders such as health care organisations, circular entrepreneurs are involved in the project but a clear connection and what that connection means, is not yet developed.

4. *REWARDING SENSATION* **Role models and ambassadors** help communities grow by embodying and catalyzing their values and processes so that other people want to follow them. A community is about satisfying personal balance between what people get from it and what they bring to the community depending on their skill, time and financial resources. For the HUB CC there are enthusiastic residents and circular entrepreneurs involved that represent great examples on what is possible with reuse and repair but they are not made visible to residents. For example at a residents meeting on the circular center where a creative session was held, explained in appendix C9, several enthusiastic entrepreneurs showcased their work. That is very inspiring to people but the non-active residents do not get to see all this great work.
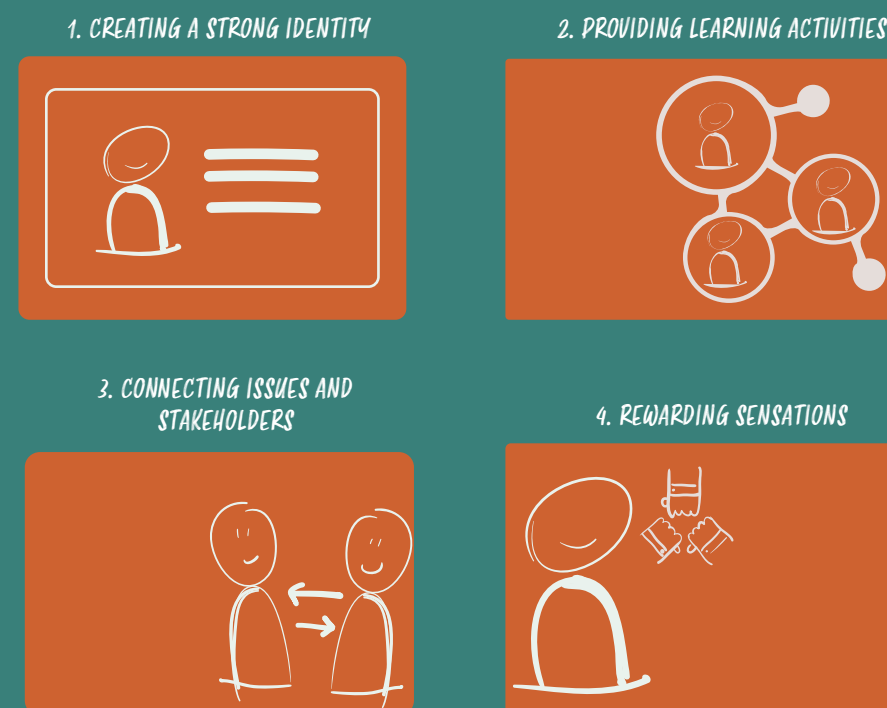
Changing behaviour: drivers and strategies

DIFFERENT STAGES OF BEHAVIOUR

There are several stages a consumer goes through when changing behaviour. Changing someones behaviour is not the result of changing one factor but multiples together. A model that adresses the different stages in behaviour change is the transtheorethical model of behaviour change (TTM) shown below. The first three stages depict the intention to change and in the last two, people act upon it.

Contemplation → Preparation → Action → Maintenance

- **Pre-contemplation:** no intention to change
- **Contemplation:** Raise awareness for the consumer about his/her problematic behaviour. The consumer is aware that they want to change something
- **Preparation:** enable the consumer to make the right choices. At this point, the consumer has the right intention to change their behaviour
- **Action:** the actual performance of the behaviour
- **Maintenance:** Motivation to maintain changes and support habit formation

FOCUSSING ON UNCONSCIOUS BEHAVIOUR

To change behaviour, it could be said that raising awareness on the problem is important. On the contrary this might seem a less effective way to change behaviour because research shows that 95% of the choices people make are unconscious, mostly based on intuition and instinct whereas 5% is made based on rational thoughts that require an effort (Glas, 2020) Table 3 shows that choices are made based on two systems in our brain, namely system one and system 2. Consumers often make choices and buy products based on system one. **In order to be able to change the (un)conscious choices in daily life, it is necessary to know what the drivers are of (un)conscious choices. That is analysed in chapter 03.** Note, for each target group, the influences of the different motives are different, so that changing (un)conscious behaviour is tailor-made.

95%	System 1	5%	System 2
Intuition and Instinct		Rational	
Unconscious, quick, associative and automatic		Conscious, slow, requires an effort	

Table 1: Humans make decisions based on two systems (Glas, 2020)

MOTIVATION AS DRIVER TOWARDS ADOPTION OF SUSTAINABLE BEHAVIOUR

There are two types of motivation, namely extrinsic and intrinsic. The first is about completing a task or exhibiting a behaviour because of outside causes such as avoiding punishment or receiving a reward. The second is about performing a task because it is personally rewarding to you (Emerging Leaders, 2021). The main difference is that intrinsic motivation comes from within and extrinsic comes from the outside. **Stimulating intrinsic behaviour is more beneficial in the long run. The ultimate goal for the BUCH CC is that residents feel intrinsic motivation to come to the center and enjoy the activities that are offered there so that repairing and reusing becomes a fun thing to do for people.**

AMOTIVATION	EXTRINSIC MOTIVATION				INTRINSIC MOTIVATION
	EXTERNAL	INTROJECTED	IDENTIFIED	INTEGRATED	
Absence of intentional regulation	Contigencies of reward and punishment	Self-worth contingent on performance	Importance of goals, vlalues and regulations	Coherence amoing goals, values and regulations	Intrinsic interest and enjoyment of the task
'It doesn't interest me/isn't relevant to me	Í have to use it.'	Í should use it because if I don't I'll feel bad about myself.'	'I use it because I believe it's worthwhile.'	'I use it because ithelps me achieve my goals and values.'	Í enjoy using it because it's fun!'

Figure 15: Taxonomy of Human Motivation; (A) Type of regulation, (B) Type of motivation, and (C) Examples translated to the user experience context (Adapted from Peters et al., 2018)

MOTIVATION NOT THE ONLY DRIVER

Motivation alone does not elict behaviour change. There are other factors that should be taken into account. Two models confirm this, namely the theory of planned behaviour by Ajzen and the Triade-model of Poisez. Ajzen states that conscious behaviour flows from the intention to prevent that behaviour. He adds an extra element in the model, namely subjective norms. That intention is determined by the following three factors. First Attitude, refering to the the attitude of a person towards the behavior (in the Triade model describes as motivation). The second is subjective norms, how other people think in his/her environment on the behaviour. The third is about perceived behavioural control (in the triade model about the opportuntiy and capacity). this is about the degree in which a person believes that he/she can perform the behaviour and the external factors that hinder or foster the behaviour. The model is used to asses the current behaviour of residents in the next chapter.
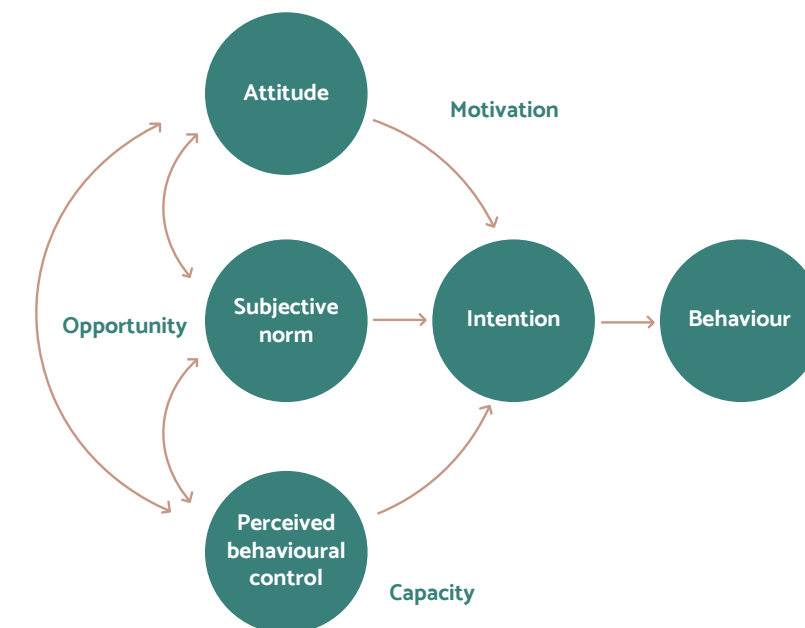
Figure 16: The theory of Planned Behaviour combined with Tiriade-model (own illustration)

THE SHIFT FRAMEWORK AS SUPPORT TO ASSES BEHAVIOUR IN THE BUCH

Everyday sustainable practices can be easy, simple activities. Even seemingly small changes are effective, especially when shared by many people. A common theme in the literature on encouraging ecologically sustainable consumer behaviour is that while consumers often self-report having positive attitudes and intentions towards sustainable consumption (Trudel and Cotte 2009), they do not always subsequently follow through with sustainable choices and behaviours (Auger and Devinney 2007; Devinney et al. 2006). This can be due to a number of reasons explained in the following section. An analysis is made of four different frameworks or models. By analysing the different factors that can drive sustainable behaviour, it can be better understood how to encourage people in the hub context. The most important factors related to repair and reuse activities are retrieved from these three frameworks. Tools that will help to influence consumption behaviour in ways that will overcome perceived barriers and highlight benefits can be selected and used for the design phase.

1. **SHIFT FRAMEWORK BY SITRA.** *A framework that consists of 5 factors that if being leveraged, can positively influence sustainable consumer behaviour.*

2. **PRINCIPLES OF CIALDINI.** *A framework that consists of seven principles that guide human behaviour, specifically on how to pursuade consumers.*

3. **FEAST FRAMEWORK FOR INTERVENTIONS.** *The FEAST framework that consist of 7 principles that can be used in interventions and result in people being more inclined towards showing the desired behaviour.*

Motivation factors

For this chapter, the drivers behind unconscious motivation are discoverd by lokking at different models mentioned before. Unconscious motivation can be explained by the following drivers, presented in the shift framework. The framework is the result of an extensive literature review in a meta-analytic fashion with a set of principles drawn from behavioural sciences (marketing, psychology, economics, etc.) The reason for this is that the shift framework offors the most complete view on the drivers related to sustainable behaviour change. Therefore the framework will be used as a guideline and reference throughout this thesis. The other two models that were reviewed are explained within the explanation of the shift framework. **If these factors are effectively considered and leveraged, people are more likely to change negative (and maintain positive) sustainable consumer behaviours (White & Habib, 2018).** When it comes to disposal and recycling behaviour, several factors stand out that can be influenced to foster sustainable behaviour.

Barriers

One of the biggest barriers to sustainable behaviour change is *IGNORANCE*. People either are not aware of the negative environmental impacts of certain behaviours or they are uncertain how to change their behaviours to make a positive impact. Another common barrier to engaging in sustainable consumer behaviour change is that some sustainable behaviours can seem to be *EFFORTFUL, DIFFICULT OR TIME-CONSUMING* (McKenzie-Mohr 2000). Other barriers to adopt sustainable behaviour are *INERTIA, SCEPTISM, REACTANCE AND THE PHYSICAL ENVIRONMENT* (Glas,2020). People tend to postpone recycling activities because they attach less value to the benefits they can receive in the future. Sometimes people can be sceptical of what they are not doing because they want to be consistent in their behaviour and attitude. Resistance can occur when people have the idea of being restricted in their freedom.
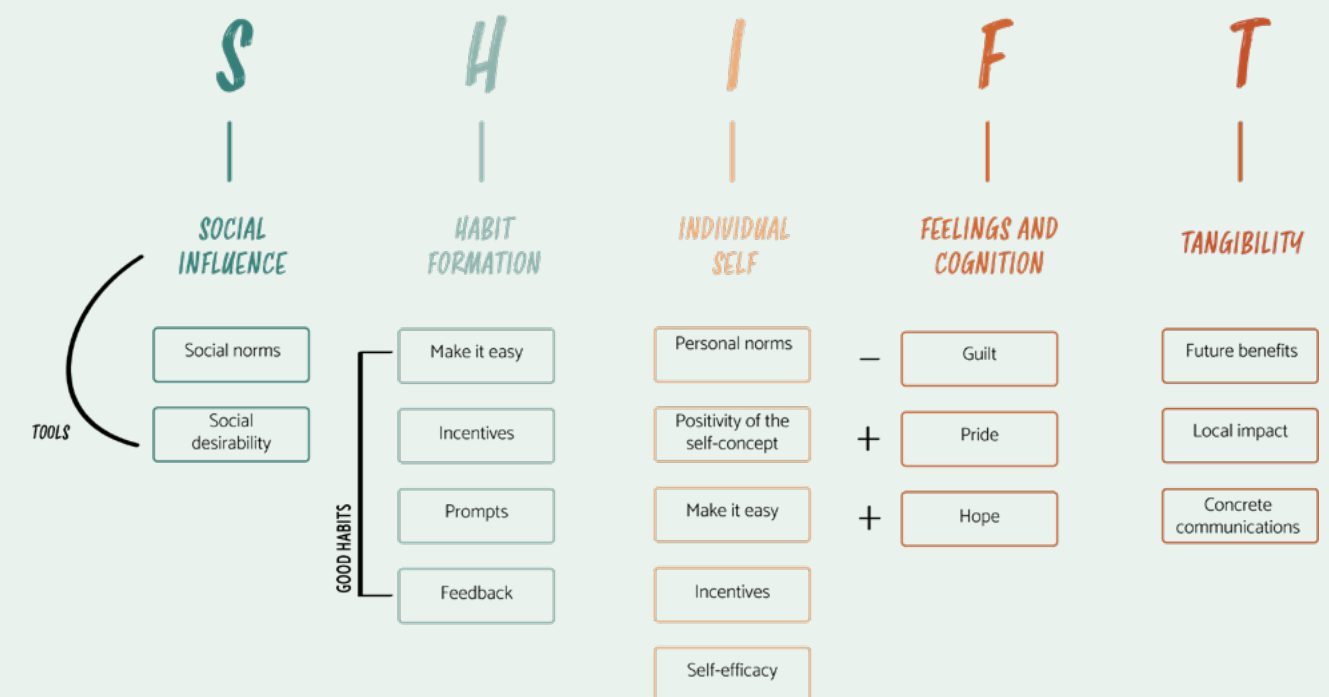

Figure 17: Shift framework as tool for sustainable behaviour change with drivers and related strategies

SOCIAL INFLUENCE

'Making a behaviour seem more socially desirable makes it more likely to be adopted' (White & Habib, 2018).

Social desirability

Make the behaviour more socially desirable by:
• **Make the behaviour visible and tangible**. (more likely to exhibit sustainable behaviours because it can provide a positive signal to others)
• **Asking for public commitments** to engage in sustainable behaviour. Research shows that asking a person to make a public commitment to engage in a future sustainable behaviour increases the likelihood of that person actually engaging in that action.

Social norms

A social norm refers to what is generally perceived to be common and socially appropriate in a given situation. For example, one compelling predictor of recycling behaviour is simply whether one's friends and neighbours recycle. it have been shown that social norms can positively influence sustainable behaviour such as recycling, refraining from littering, waste disposal and practicing energy conservation (White & Habib, 2018). People are influenced strongly by the behaviour of other people because they like to belong to a group. People buy products based on how they think it makes other feel and have a tendency to belong to something (Mey, 2020) (Cialdini, 2021) . It refers to how the person thinks other people will look at him/her.

Make the behaviour more socially desirable by:
• **Making a behaviour seem more socially approved of, more commonly engaged in by one's peers** (more likely to be adopted)
• **Communicate what others are doing and approve of the desired sustainable consumer behaviour.** It can be used to show relevant other or in-group members using the product or service or engaging in sustainable action.
• **Availability heuristics** A decision is made that depends on the ease with which examples come to mind. The easier it is for examples to come to mind, the more often we think something is happening. For example, when someone goes sailing on a cruise ship and has just seen the movie Titanic, it is likely that this person estimates the chances are high that the cruise ship could sink. Therefore making the social behaviour visible, people might realise the behaviour occurs more then they think.

Relation to the other frameworks:
• Unity principle by Cialdini (Someone that is part of a certain group or has the feeling of belonging, will make an effort to maintain this)
• S of SOCIAL of the FEAST framework
(indicating the existing social norms to engage in the relevant behaviours.)

HABIT

'If ecological consumer choices, usage and disposal of products and services can become habitual, these actions are more likely to be adopted and continued into the future.' (White & Habib, 2018).

A habit is created when repeated actions occur automatically without much conscious control or effort in stable contexts, such as in the same location or at the same time of day (White & Habib, 2018). A key aspect in habit formation is repetition, when an action is repeated multiple times, it is more likely to become a habit. Next a habit is characterised by a low cognitive burden so high levels of processing power will not lead to habit formation. A stable context is the last key aspect. Habits tend to occur in the same time and place. For example Purchasing a new product creates a reward, because people like to have a working product. It is therefore a habit to purchase a new product, while also repairing could be a habit.

Fostering good habits by:
• **Making the desired sustainable action seem easier to do**. (This can increase the chances that it will become a habit that consumers are willing to adopt and maintain.)
• **Setting green behaviours and options to be a default choice.**
• **Prompts:** verbal or written antecedent messages that remind consumers what the desirable target behaviour is. Low-involvement prompts are not effective on their own. They emphasise that prompts are most effective when the prompted behaviour is easy to carry out, well defined and occurs close in time to the prompt message.

Relation to the other frameworks:
• E of EASY of the FEAST framework
Make it easy to engage in the behaviour

Repitition + Automatic + Stable context = HABIT

INDIVIDUAL SELF

'Consumers demonstrate the motivation to view the self as being consistent' (White & Habib, 2018).

Attitude behaviour consistency. People find it important that the attitude they have is consistent with the behaviour they exhibit (Glas,2020), habib 2020, Cialdini, 2021). For example, if people do not separate waste, is it likely that they also have a negative attitude towards the separation of waste.

Appealing to the individual self by:
• **making it easier for people** to express the target behavior and a positive attitude towards the target behaviour would automatically follow
• Consistency is activated by looking for, and asking for, **small initial commitments** that can be made.
• **Encourage a sense of self efficacy**. Self-efficacy is about having the ability to engage in the desired behaviour and think that the action can be effective in making a difference. consumers must believe that they have the ability to engage in the desired behaviour (in a similar way to perceived behavioural control discussed earlier in relation to the theory of planned behaviour. Second, the consumer must think that the action can be effective in making a difference.
Relation to the other frameworks:
• Consistency principle by Cialdini (People like to be consistent with the things they previously said or done)

TANGIBILITY

'Environmental appeals often ask people to engage in behaviours that are costly in the present, but their long-term consequences are far off in the future.' (White & Habib, 2018).

Focussing on the tangibility of a product/service can help residents to see the direct impact. This way they can understand the urgency of the problem and not see it as a distant future issue.

Stressing tangibility by:
• **Future benefits** (Thinking more in an abstract manner and the future benefits to engaging in the behaviour)
• **Local impact.** (make the impact seem local and proximal so people can relate to it as opposed to global and distant)
• **Concrete communications** (make environmental problems and solutions seem more concrete, relevant and tangible to the present self.)
• **Desire for intangibles** (Encourage the desire for intangibles such as experiences over ownership of goods)

FEELINGS AND COGNITION

'Sustainable actions can lead to positive, "warm glow" emotions which can spill over, leading to positive evaluations of an overall service experience..' (White & Habib, 2018).

A meta-analysis of determinants of pro environmental behaviour finds that **guilt** is an important predictor of moral norms, attitudes and perceived behavioural control (PBC) which then influence environmentally friendly attitudes and behaviours. When people feel guilty for their actions they feel more morally responsible for the environment and are subsequently more likely to behave in an environmentally friendly manner.

Fostering feelings and cognition by
• **Focusing on pride** (Pride is a positive emotion that causes people to feel that they are responsible for positive outcomes. The effect of pride on continued pro-environmental behaviour increases when people feel that those who are important to them perceive eco-friendly friendly behaviour as a norm is important to form group norms that encourage environmental behaviour in order for people to feel proud and continue engaging in that behaviour.)

• **Creating positive emotions** is another effective way to make people more likely to engage in sustainable behaviour because people derive some degree of positive effect or satisfaction from the act. Behavior change is usually perceived as scary & challenging but if you give people a sense of enjoyment and fun associated with it, it can be very effective (Zulfiqar & Hina, 2021). Also when people have more positive feelings towards the government and circular companies, they are more inclined to listen. This is also in line with making the experience pleasant and desired, focussing on the uniqueness of the action.

Relation to the other frameworks:
• Fun and attractive of the FEAST framework (Give sense of enjoyment and fun associated with it+making the desired action pleasant and attractive

2.4 Good Practices that encourage sustainable behaviour

In order to gain a better insight and a broader perspective on the involvement of residents with circular projects and to define what important elements contribute to the success. Existing initiatives in the Netherlands and abroad were investigated and linked to the previous behaviour framework. A review is made of the top ten rated plans submitted for the contest of Circular crafts center by Rijkswaterstaat and other initiatives in the Netherlands. Interesting examples outside the Netherlands were found via the Interreg Europe funded project CECI, which is led by LAB University of Applied Sciences in Lahti, Finland. It is interregional cooperation among 8 partners and 6 countries which focuses on citizen involvement in a Circular Economy implementation and shares information, experiences, and good practices of citizen participation in a circular economy. Interesting good practices were reviewed and analysed with the NADI model to be able to discover the related underlying/deeper themes that these practices address (see appendix B5). It is a four-layer model that shows the different levels of depth of insights into human needs and aspirations, and how these levels affect the design and innovation process (Van der Bijl-Brouwer, n.d). From analysing this collection, four distinct ways were found in which projects are stimulating users to think more circular or act more circular.

Figure 18: Example campaign Drenthe with residents as ambassadors

The power of good marketing and communication to increase intrinsic motivation for embracing and participating in a circular economy

According to Henk Martens, the programme manager of the Upcycle center in Almere, you **cannot underestimate the power of good marketing and communication** (Amsterdam Smart City, 2020). At the Upcyclecenter, start-ups design and create products out of the waste that residents can bring, for instance, interior design products, clothes and jewellery. Making residents aware from the start and reducing potential barriers is key in making a circular center successful. Drenthe geeft door is another example that shows people the desired behaviour by means of a campaign. it is about influencing the social norm. It increases visibility among residents to **showcase what is possible in a fun, interactive manner**. With the campaign they are trying to stimulate the individual to think as part of the collective by focussing on the individual self; 'Together we have the goal to keep as little residual waste as possible.' Omrin Estafette in Amersfoort started to shift the mind of residents with a clear communication strategy, which is uncommon for thrift shops to have. The goal is to maken reusing fun by showing the special **stories behind products so that residents know what they are paying for and can contribute to a good purpose.** The project circuit, in antwerp sees **good communication as a lever for behavioural change**. They made different marketing materials via several channels, target groups which made the communication complex yet needed to keep everyone on board.

Focus on local impact to make things tangible

In the campaign of Drenthe geeft door they make use of **ambassadors** as a means to reach residents and communicate **local impact** and transfer clear communication (figure 18). De blauwe wijn economie is an initiative for and by residents. It starts **with initiatives from residents** to reduce waste so that ownership is stimulated. Training and coaching residents in discovering and following their dream and by stimulating social entrepreneurship the blauwe wijk economie aims to achieve the circular economy goals set by the government (DeBlauweWijkEconomie, 2021). An important take-away is that **one central platform** that combines multiple sources of information and activities makes it easy for residents to find their information and participate. The platform includes a section where people can sell their items or ask for help. It is a good example of how neighbourhood management can be shaped from active residents. A challenge for the upcycling center in Almere was the involvement of residents. **Involving the residents from the start** and reducing the potential barriers for the users of the center could motivate people to start thinking circularly. The use of ambassadors was also stressed as important. The circuit projects shows that you have more chances on behaviour change with **very tangible and concrete initiatives** where residents can see the immediate result.

These examples show that **campaigns are widely used as a tool to increase visibility** and therefore increase the awareness among residents as a first step towards transitioning into a circular economy. In these campaigns the social norm is emphasized by showing other people (could be as ambassadors) doing the desired behaviour and thinking of the individual as part of the collective.

These examples show that local sharing impact can increase the sense of community in the area. **ambassadors are tools to communicate local impact.** Making items more close and proximal to individuals, can help them make the problem more proximal and close as opposed to distant and in the far future.
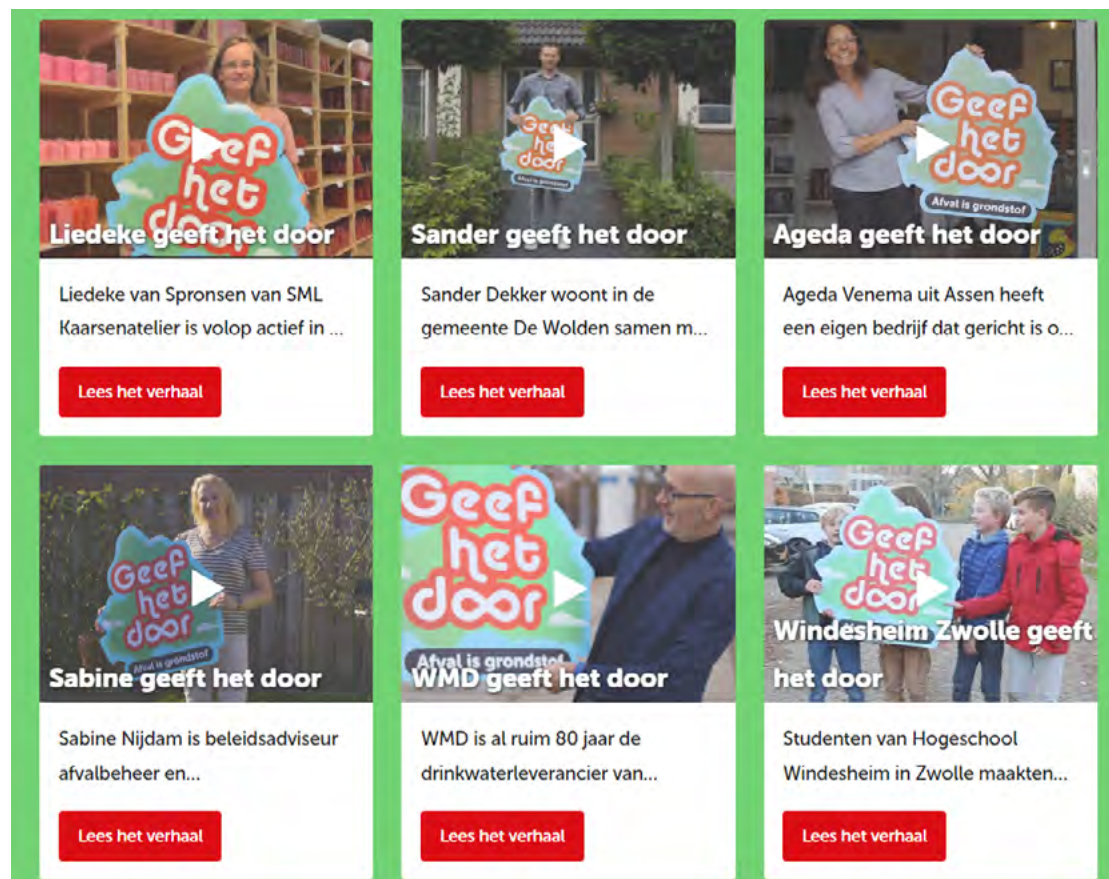
Creating a stimulating environment and positive emotions

The environment and activities in which circular activities take place can have an impact on how active residents react to these actions. By creating a shop where upcycled products are presented that **inspires** residents. Also done by creating positive stories to reach residents. For example, Waardring Zwolle also launched a lifestyle shop in the city center to attract non-thrift store people. The pop-up fest of Waardering Zwolle showed that **the location was a trigger** for people to join the event. It was an old 'Ijsselcentrale' where a pop-up restaurant was established. Incentives proved to work quite well in the **recycling Boulevard** because once a month they organise an auction. Apparently, people are waiting eagerly in line for this. Customers can bid by writing a sum on a note and put this in a box. The highest bidder wins and this continues for a week. it creates value by showcasing certain products. They also have a clear out action which is a lottery for products that could not find a place in the store yet and will be sold via the **lottery.** Apparently people line up to sign in for the products. Engaging residents to take actions on an individual level can be done by creating a fun, exciting experience. That is what the **personal upcycling platform** (Brazil) is achieving. It guides you to look into your own closet for raw materials after which you select them and register on the platform, choose a model and send parts to the nearest upcycler. After some time you receive a custom made piece. **4H** is a youth organisation club that promotes sustainable and resource-wise life by giving people the opportunity to find their own strengths as well as focusing on fostering entrepreneurship and giving education so that young people are prepared for working life. In Antwerpen, **Circuit** is the representation of an experience center about circularity. As a resident you can go to circuit in the district, to get acquainted with sustainable products, to have your bike or clothing repaired or to participate in workshops. They stress the importance of small steps an individual can take in order to contribute to the community. When an individual performs well on circular activities via an application, he/she can receive coins that can be exchange for discounts in a repair shop for example. If we have learned 1 thing from the Circular South project, it is that meeting works. Thanks to the group feeling and common goal, the participating neighbors achieved great results and kept up the circular habits much longer. Circuit By switching to a circular life, we keep the city liveable for ourselves, but especially for those who come after us. It turned out to be difficult to convince people with that big long-term story. Because they prefer a direct benefit for themselves, for example a lower energy bill. We noticed the same thing when communicating about 'the Circular South project'. The overarching story turned out to be a far-from-my-bed show. So we quickly took a different approach, with a focus **on concrete actions and initiatives.** In a friendly and safe environment where people can relax, it is much easier to contribute to a circular economy.

> These examples show that the **environment has to be inspiring to motivate residents.** Showcasing **success stories** can perhaps influence social norms around repair and reuse activities. Making experiences engaging and personal helps people to make individual actions. Having a network of enthusiastic people that are made visible can motivate residents to participate.

Connecting people and businesses

Several projects show the importance of starting with a group of highly motivated people as a first step towards a circular city. Henk Martens from Almere said in an interview by (Amsterdam Smart City, 2020) that you should start with highly motivated people that believe in the vision and are intrinsivly motivated to make it a success. Waardering also shows that no physical place is needed when you start off with a well functioning network of active local players.These active players can have an effect on the residents. Since Waardering has a **large network** of mostly one-man businesses, knowledge institutions, organisations, many people could be reached one-to-one and therefore many showed up at the event. This is because of the personal approach that stimulated them to come. A communication manager from Waardering Zwolle stated that Waardering is currently not doing much directly for the residents because they were so busy creating a network with circular entrepreneurs and organisations. The pop-up fest was the first event organised at communicating their achievements to the residents. so the network relies on word of mouth communication via these entrepreneurs and organisations. **'Rezero'** is a platform that facilitates an infrastructure where recyclers, repair shop owners and customers come together. They identified a gap between a defective product reaching the repair shop and the product reaching a dumpster and the reason behind the choices was not misplaced values or ethics but convenience. Another project in latin America called **Reparar.org** has created an extensive collaborative database for extending product's life through reuse, repair, and correct disposal, thus helping reduce waste. Their experience of over 5 years has shown that there is great local interest in repair, but also a practical difficulty in finding trustworthy repair services, and efficient ways of donating for reuse or disposing for recycling. It is a great tool that offers greater job stability, **helping promote the repairers their work and reach new customers.** It allows users to search and rate repair services according to category and location within the city of Buenos Aires. **Ecolana** is a mexican project that connects residents as recycling heroes with collectors via a platform that visually gives information where to recycle. Residents can also rate recycling centers. it is about having the feeling that you are **being part of something bigger than your own actions.** Movement, a creative movement also emphasises this by helping people to resignify their residential waste in a creative way. It is an instagram community where people can find inspiration to think of creative homemade solutions. **Ecobox** (Brazil) aims to let people consume more sustainably by connecting them to local producers. It Allows you to buy, sell and exchange products in a sustainable way. It can be daily used by customers to find the correct destination for their recyclable waste, and it also helps them to find other products and more sustainable solutions. **Circuit** The meeting, cooperation and togetherness with others had a huge positive effect on the engagement of our participants.

> These examples show that it does not necessarily have to be one physical location but it could **be a solution that connects different elements together that were not connected previously**. Here the connection between residents and the right, useful stakeholders are important in giving the residents the opportunity to participate and see their impact. It is about being part of something bigger than your own actions.

CONCLUSION
MOTIVATION AND BARRIERS IN ADOPTING A SUSTAINABLE LIFESTYLE AND GOOD PRACTICES

Changing the behaviour of people, requires understanding what consitutes the behaviour, the barriers involved in not engaging in sustainable beahviour and what can be done to influence the current behaviour. Three frameworks were reviewed and are summarised in the table on the right. The triade model is used as a frame to fill in the barriers and tools to influence behaviour because it gives a clear image of the three drivers. Motivation is a leading driver in behaviour, capacity and opportunity have the tendency to adapt to motivation. consequently, motivation is one of the strongest point in changing someone's behaviour. However, if the capacity and opportunity are both not exisiting, the motivation decreases as well.

The main barriers in research on sustainble behaviour change conclude that when you want behaviour change make it very easy for people to engage in the desired behavior. People buy or choose products based on how it makes them feel (Mey, 2020). It refers to the lazy nature of people and that they will choose the path that is most convenient for them. Even if the product removes even the tiniest friction or annoyance, people tend to select this and even pay more.

In terms of capacity the barrier that re-occurs in literature is ignorance. it relates to the mental capacity (knowledge and skills) of the person; People either are not aware of the negative environmental impacts of certain behaviours or they are uncertain how to change their behaviours to make a positive impact.

The frameworks and good practices were reviewed to understand how they influenced specific barriers involved in changing peoples behaviour. These examples show the importance of making the desired sustainable behaviour an experience that is socially acceptable by making the social norm more visible, fostering good habits, make the message more tangible and local. Making this whole experience easy and related with positive emotions is key to overcome the barriers associated with sutainable behaviour change, as described above. Other work suggests that even communicating messages in ways that are easy to understand can make the behaviour itself seem easier, leading to long-term, habitual behaviour change. To be able to communicate messages, there should be a clear plan on which messages to communicate . The buch is lacking this element because there is no clear communication style and format or key message that can be communicated to residents. In essence the circular center should be a learning community on circularity. To create an attractive community that people want to be associated with, a strong identity is needed.

In the design process it is worthwile to consider what barriers to behaviour change exist in the context of the HUB and the circular center. These barriers then can give insights in the specific behahviour that can be targeted, The tools presented in this chapter can be selected based on most relevant for this scope.

BARRIERS FROM THE FRAMEWORKS

Behaviour: =	Motivation:	x	Capacity:	x	Opportunity:
	• Lazy nature of people: choosing the most convenient path • Time-consuming, effortful, difficult • Inertia: attach less value to benefits that they will only experience in the future • Sceptic on what they do not do because of attitude-consistency • Reactance: feeling that freedom is being limited		• Ignorance		

TOOLS FROM FRAMEWORKS

Behaviour: =	Motivation:	x	Capacity:	x	Opportunity:
	• Creating common identity to associate with • Connecting different people together • Tangibilty: direct and local impact • Pride: positive feelings and enjoyment • Individual self: asking for small commitment • Habit: make desired beahviour seem easy • Social desirability: make behaviour visible and tangible • Social norm: show other people engaging in the behaviour		• Individual self: self-efficacy		• Tangibility: providing clear communication

TOOLS FROM GOOD PRACTICES

Behaviour: =	Motivation:	x	Capacity:	x	Opportunity:
	• Inspiring/fun/positive environment success stories • Working with ambassadors and key figures • Make the desired action seem easy • Group feeling; meeting works • Direct impact and concrete examples				• Clear and easy to understand messages • Power of good marketing and communication to get residents involved from the beginning

03 WHAT ABOUT THE RESIDENTS?

This section is , as the title suggests, about people. In a circular economy people cannot be forgotten as it is a social transformation as well. This chapter dives deeper into the barriers and opportunities for people to participate in repair and reuse activities and their view on a circular center. In order to be a community in the BUCH that is actively involved in circular practices, we need to know what motivates or inhibits individuals to change their behaviour. Through various interviews, surveys and a creative session, the values obstacles and opportunities for a circular center were identified. At the end of this chapter barriers to behaviour change are identified and research question 1 is answered.

Figure 19: Resident showing his work at the creative session (n.d)

3.1 Finding the key challenges and opportunities

Research outline: approach

The vision of a circular center has been formed by the BUCH. However this has not yet been communicated clearly to the residents. There are two main parts that are looked at.

1. First finding out the residents current view on circular activities, analysing their current behaviour of repair and reuse.

2. Second, finding out what their perspective is on the circular center, analaysing their wishes and needs During this phase, the views of different stakeholders and their needs, wishes, barriers and opportunities are mapped out.

To have a broad understanding of the views on a circular center an overview is made of the people interviewed and the research activities done (table 2). At the end of this chapter, drivers and barrier to residents' involvement with repair and reuse activities and the circular center can be identified. Drivers relate to factors that are beneficial for changing someone's behaviour. Barriers relate to the hurdles that might hinder this change.

STAKEHOLDERS INTERVIEWED AND RELATED METHODS

RESIDENTS BUCH MUNICIPALITIES	Method	In-depth Interview on location with residents from Ultgeest *(3 people interviewed)*
		Co-creation session Residents' meeting in collaboration with Selab *(on average 40 people joined the session)*
		A survey conducted by Selab *(261 respondents)*
GENERAL INFROMATION DUTCH RESIDENTS	Method	Online survey with an additional flyer to spread at recycling centers *(37 respondents)*
THRIFT STORES	Method	Interview on location recycling center Heiloo *(2 people interviewed)*
RECYCLING FACILITY	Method	Interview on location thrift store Tol in Heiloo (1 person interviewed) + interview with people in thrift store Tol (4 people interviewed)
		Short interviews on location in thrift store Delft (Rataplan (6 people interviewed)
		+ Stichting Kringloop Delft (2 people interviewed)

Table 2: The interviewed stakeholders

INTERVIEW	DURATION
SEMI-STRUCTURED IN-DEPTH INTERVIEW	
P1: Owner thrift store tol	120 min
P2: Front man recycling center Heiloo	45 min
P3: Older woman visiting thrift store tol	15 min
P4: Anke Waardering Zwolle	30 min
P4,5,6: Residents Uitgeest	180 min

SEMI-STRUCTURED OPEN ENDED	
P7: Woman visiting thrift store tol	15 min
P8 Woman visiting thrift store tol	5 min
P9: Phd student visiting thrift store Delft	10 min
Employee thrift store Delft	5 min
5 Visitors thrift store Rataplan, Delft	Each 5 min

Table 3: The duration of interviews taken

GOAL

The goal of this research is to map out the different perspectives of the stakeholders involved in the envisioned Circular Center of the BUCH. By answering the questions above, the barriers and opportunities of participating in repair and reuse activities can be identified. This will lead to a problem definition and design statements that help to identify possible design directions.

PARTICIPANTS

In this project, the participants vary from residents that are owners of thrift store, company, organisations, charity work, employees of repair cafe's, employees of recycling center. The number of people interviewed is written in table 3

Methods

In order to answer the research question, a variety of methods were used:

OBSERVATION

A visit to the recycling center in Heiloo was done to get a view on the disposal process. In heiloo an interview with the recycling center frontman Hans Tielen and an employee was also conducted to hear their opinion on the plans for a circular center. The thrift store Noppes Uitgeest was visited.

QUALITATIVE INTERVIEWS

A visit to the recycling center in Heiloo was done to get 15 qualitative interviews were conducted with people from the thrift store, recycling center and residents of Uitgeest. The type of interview and duration are shown in (table x) The interviews followed the semi-structed general interview guide approach by Patton, 2002. A complete overview of all the questions and interview guide can be found in appendix C1.

SURVEYS

Two surveys were conducted. The aim was to have created a survey for the BUCH residents to find out which repair or reuse activities they already do, what their associations with thrift stores and recyclings centers are and what they like or did not like about these three topics. However, due to restrictions by the wethouders in terms of communication towards residents, the survey that was designed could not be sent out to the BUCH residents. Also, the flyer that was made could not be distributed in the recycling center

because careful attention needed to be paid in requiring the effort of residents. Therefore a general survey was made for dutch residents to receive an idea on which initiatives people undertake and their reason to do this or not. In addition, Selab conducted a large scale survey for all the BUCH residents to discover the following three points

1. the degree of awareness with repair and reuse activities.

2. What is the current state of the recycling centers and improvements to be made?

3. to plant a seed with people about what a circular center could be (making residents already aware about their consumption behavior via the survey itself)

Setup general survey

To gain a more general understanding of the circular initiatives that people already undertake and their reasons for doing so or not, a questionnaire was set up. six personas from Thijsen (2020) were used as input to validate with whom the respondent can identify most/least and with whom he would prefer to be identified. Since it is a 15 min questionnaire, an effort is done to make it appealing to the respondents. Therefore the personas and circular initiatives were visually made. Questions about their adoption of a sustainable lifestyle were inspired by a similar UK survey that focussed on how consumers are adopting a sustainable lifestyle (Deloitte, 2021). The survey was distributed via online channels and 37 people across the Netherlands responded. 63% were woman and 38% men.

Reflection 1: The survey was planned to be sent out on around 4th of October. However, due to delays at the councillor office to approve the survey, it was distributed around 26th of October until 26th of November. This had some consequences in my project approach. Normally a survey is created first before diving deeper into the matter. Now, the survey is being used as a validation tool of my assumptions in the research phase.

Setup HUB survey

The survey ended on 26th of November and the conclusions were discussed on the 6th of December so the final results still need be written down. A survey set up by Selab is conducted to discover the current state of awareness and the recycling centers. It also plants a seed with people about what a circular center could be and what facilities can contribute to repair and reuse services. So viewing the survey as a tool to make residents already aware of their consumption behaviour. 259 people responded of which 70% came from Bergen, 20%Heiloo and 10% Uitgeest. The survey was distributed via the participation platforms of each municipality (ikdenkmeeoverheilo). A reference was made via social media, local paper and newsletter of each municipality). The survey consisted of 27 questions.

CREATIVE SESSION

On the 3th of November a residents gathering was planned by the BUCH in collaboration with Selab to receive input from the residents on the current state of the circular center. A creative session was facilitated to I discover the values that people want to see in a Circular Buch center. 12 participants joined the session.. The session was part of an event of Se lab and Esther to showcase the architect's concepts and ask for feedback and input.. A great mix of people (40) was present. The city counsellor, area directors, people from the city council, thrift store and recycling center employees and residents were present. The event was all about inspiring the participants and receiving input on the idea of the circular center.

Setup

Seven different tables were set up for participants. One with the architect's concepts, one with circular business models, one with product ideas of students, one with products made by local residents and three tables that were for the creative session of Marguerite and I. The main goal was to find the drivers behind what people currently are doing concerning repair and re-use and what people would like to see in the future circular center. Three tables were set up where people could join for 15 min to pass on to the next table (see figure 23) For the first table, people were asked to write down any activity they already did around circularity. To give them some inspiration, a poster with current initiatives was made. The second table was about the future. Again, a poster with possible activities that could happen in a circular center were presented on a poster to give inspiration. A space was intentionally left blank so that participants could fill in what they would like to see

in such a center. To eventually come to the last table where additional discussions were made based on what they previously answered at table 1 and 2. They could make use of icons to express what changed in their behaviour when walking through the different tables, if they received some new insights or not.

In order to discover the values that people want to see in a Circular Buch center, we have to ask about the experiences. This is possible by looking at the current and past experiences of residents in order to discuss the vision of the future. This is based on the path of expression described by Sanders & Stappers (2021), see figure 20.

On 3 November, the vision of the future was the main focus. In the session, the goal was to discover what the residents' vision/expectation of the center is and which elements they find important. So what values are they looking for in such a center.

Reflection 2: Initially the idea was to create a creative session for residents. For this 45 min of the programme were planned. It is an amazing opportunity to collect rich data from the participants' experiences by using generative techniques with them. Generative techniques are tools that can be used to discover new information about your users' goal and motivations to better understand their behavior. For the session is was expected to have the residents in the session for 45 min so that deep insights and experiences could be discussed. However the expectations and goals of the event were not communicated clearly and resulted in not having the opportunity to perform the prepared activities for the creative session. Therefore adaptations had to be made to fit into the programme of that day. It resulted in the received information being more superficial than anticipated. The initial plan for the creative session can be found in Appendix C9.
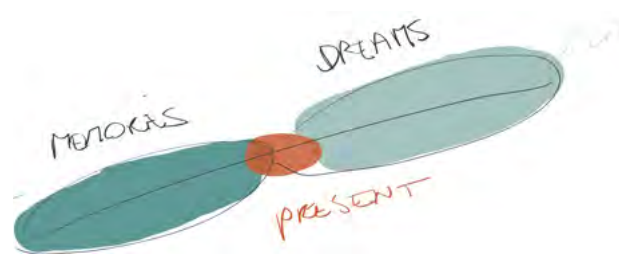
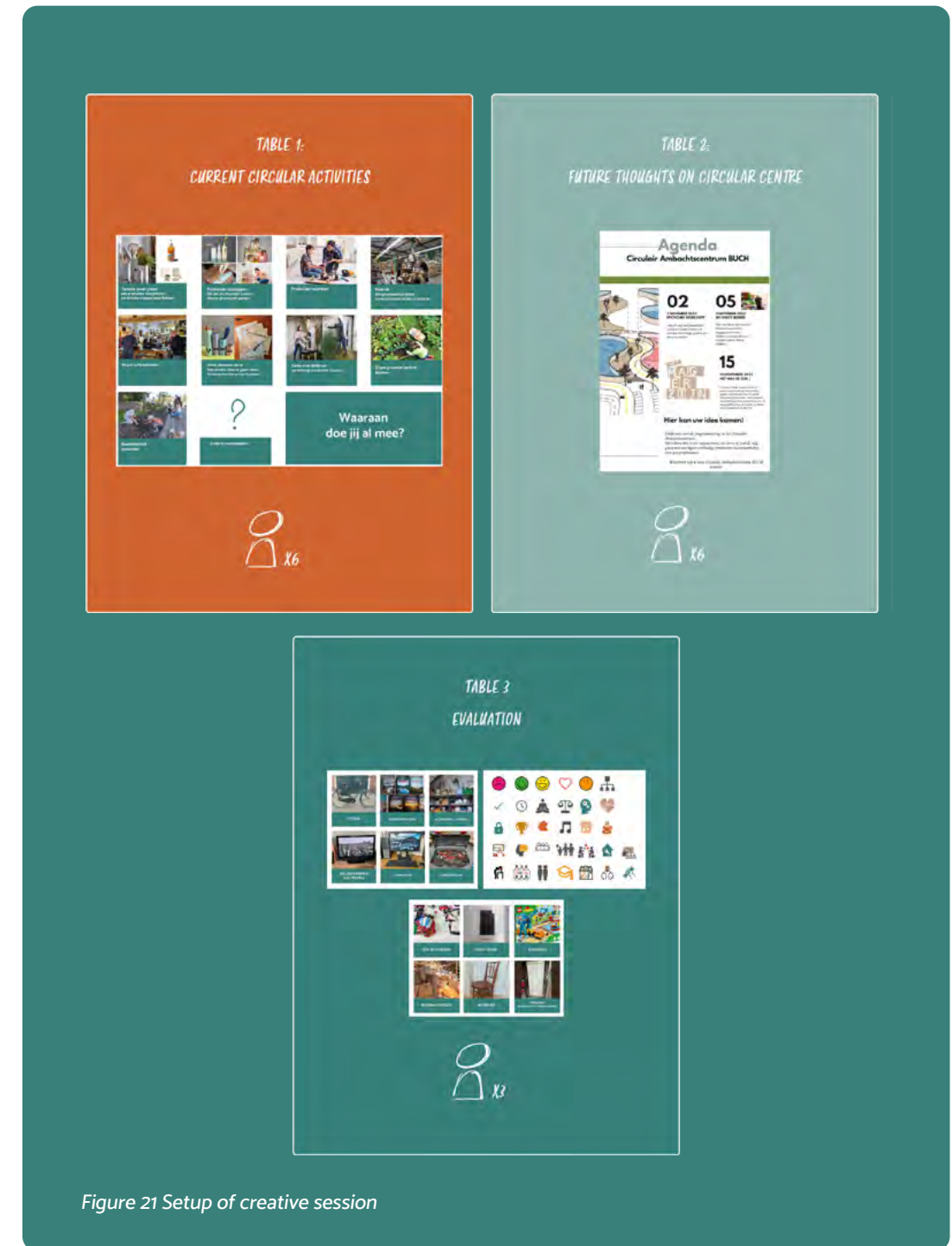Figure 20: Path of expression by Sanders & Stappers (2021)

Figure 21 Setup of creative session

3.2 Perspectives on the circular center

A stakeholder diagram was made to understand the perspectives of the different residents in relation to each other, shown in figure 22. The information in the diagram are insights retrieved from interviews, the creative session, desk research, previous graduation reports and the general survey. It represent a first exploration of the possible values residents might want to see in the circular center. Residents are also thrift store owners, repair cafe employees, circular entrepreneurs, so they are included as well. However the focus of this thesis lies in the residents that are not having an occupation related to repair and reuse. The diagram helps to understand what roles other stakeholders besides residents might have in motivating residents. For the scope of this thesis, the education and health organisations are left out because their importance is less. They are included in the diagram just to give a better overview for the reader. The inner two circles show possible beneficial relation between the CC en a certain stakeholder. The first shows possible value exchanges. The second shows the main drivers related to the perspective of the CC and what role they want to have. The outer circles are what each stakeholder needs in relation to the CC. **Especially thrift store owners and circular entrepreneurs could help in spreading stories that might stimulate residents to change their intentions into actions. That is concluded from the following insights: The results from the perspective of the residents their current behaviour and perspective is presented in chapter 3.3, 3.4 and 3.5.**

Thrift stores : Visibility on what thrift stores do, their products and great stories.

The thrift stores do want more familiarity with, and involvement of, the social domain. This include having workplaces for people with a distant in the labour market (Middelkamp & van den Heerik, 2021). From the HUB survey it also becomes clear that residents are relatively unaware of the offered workplaces for repair activities in thrift stores (See appendix C4.5 for the question of the survey). In the circular center, visibility for thrift store owners on their social role and showcasing their products is desired. Also the great stories that exists in thrift stores are desired to be shown.

Figure 22: Stakeholder diagram

C	Creative session
D	Desk reseach
I	Interviews
P	Previous thesis
S	Survey HUB
Sg	General survey

Recycling center: efficiency

The frontman of the recycling center in Heiloo expressed that the only thing he needs in a circular center is efficiency. He wants to receive clean material streams so that the sorting and recycling process can be optimised. Further, he was concerned about the center if it would become a place for people to hang out and where everything would just randomly be taken away. This concerns probably comes from the fact that he wants clear mono streams and do not want a chaotic structure.

Repair cafes

Repair cafes are mostly led by older people. When asking residents in Uitgeest what they associate with a repair cafe, the mother found it dull and the son thought it was something technically advanced. So the perception that people have of a repair cafe differs a lot. From the HUB survey the possibility of a repair cafe was relatively unknown for repair activities. Only 20% of the respondents would visit a repair cafe for reparation. Three participants of the creative session described that via the repair cafe they would help other people or fight loneliness in their neighborhood. When asking for their future wishes in the circular center, the social aspect was most important for them. The three participants from the repair cafe also stated that the intergenerational link could be valuable in exchanging knowledge and crafts from older and younger people. It seems that there is not enough awareness on what a repair cafe can do for residents. It does not have a stimulating connotation to it, which might hinder residents to use the services.

Circular entrepreneurs: possible ambassadors

Circular entrepreneurs miss the stories about the products that need to be told. There are so many beautiful stories of people helping each other but they are not going anywhere. This resulted from interviews but also from a previous graduation project that mapped out the needs of circular entrepreneurs. People love to tell stories and show other people what they are currently doing for repair and reuse activities. They want to be active in communication towards residents. Talking to a circular entrepreneur at the creative session, she mentioned:

'people want to, but we still have to give them a push to take action.'

It is about helping residents to prepare their actions by enabling the right mindset/intention to change (refering to the stages of behaviour change).
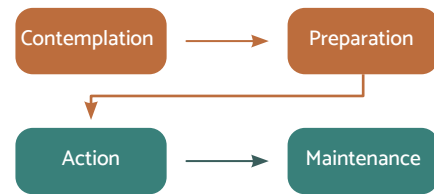
This sparked the idea that circular entrepreneurs and thrift store owners might play a leading role in being ambassadors for circular activities to stimulate residents. However attention needs to be paid to creating direct and local impact as the good practices in chapter 2.3 showed. Residents need to be ambassadors as well.

3.3 Needs for repair, reuse and the circular center

Finding the main barriers and drivers

The result of the two main parts that were found out in the research activities, are presented in the figure 24.. Several barriers in the adoption of repair and reuse activities and perspectives on the circular center are identified based on the results of the research activities. The drivers of behaviour is what appeared to be important to the HUB residents. The tools of the good practices and frameworks are used as a reference while filling in the triade model. For each tool, appropriate ways to use them are added based on the shift frameworks suggestions (See App. 6.3). Focussing on these tools of the shift framework could helpt to overcome the perceived barriers. From these barriers and drivers the needs for residents can be analysed which are explained on the following page. After identifying the needs, the main challenges and opportunities were identified that relate to the needs.

Drivers
The drivers mostly relate to
- Social norms,
- Self-efficacy,
- Tangibility,
- Feelings and cognition: positive emotions

Barriers
The most common barriers relate to;
- Habits, self-efficacy
- Social norm,
- Tangibility
- Feelings and cognition: positive emotions

Finding the needs

To answer research question one: ' what are the values that residents want to see in the circular center?' the retrieved insights from all he different acitivities in relation to the specific needs of the residents are reviewed again with a different perspective. To find overlap between the findings of the activities, a closer look has been taken into the 13 fundamental needs introduced by Desmet and Fokkingma 2020 (App fixme). These fundemental needs represent needs that are universal deep needs of individuals, even though they might have different goals and whishes (Desmet & Fokkinga, 2020). This to get a better understanding of the universal needs present among BUCH residents in relation to the CC. These needs offer an insight in what residents in BUCH want to derive from the CC in the future and form the conclusion of the discovery phase to answer RQ1. From this research six universal needs are identified. These needs arose from compiling data from interviews, surveys and the creative session. This data was then analysed and clustered to be able to arive to cohesive conclusions (App. C9). Each fundemental needs has a more specific contextual need related to the CC. These universal needs and their context-specific needs are presented in figure 30. It was decided to use this approach instead of making personas because this research focusses on the future relation between residents and the circular center to determine the possible meaning of the CC that residents want to see.

Fundamental needs

Six fundemental needs emerged from the data as being the most relevant (App.) For this study it appeared that the need for purpose, impact, comfort , recognition, competence and stimulation are most important to residents. Purpose means having a clear sense of what makes your life meaningful and valuable. Impact means seeing that actions have impact and contribute to something. Comfort means having an easy, simple, relaxing life. Recognition means getting appreciation for what you do and who you are. Competence means having control over your environment and being able to exercise your skill. Stimulation means being mentally and physically stimulated by novel, varied and relevant impulses and stimuli.

Context-specific needs related to challenges

To connect these six fundemental needs with more detailed context needs, the data from App. C5 is reclustered into groups that relate to one of these contextual needs. Analysing the re-clustered quotes, resulted in the following nine contextual needs. Having identified the needs, the main challenges and opportunities for the circular center are explained on the following page 58.

BARRIERS AND DRIVERS FROM THE RESIDENTS TO REPAIR AND REUSE

Behaviour=	Motivation	Capacity	Opportunity
Barriers	Time and effort involved in repairing and reusing it yourself *(habits: make it easy, prompts)*	not delivering products for reuse->No knowledge about possibilities where to deliver products. *(Tangibility: concrete communications: highlight the specific outcomes and steps residents can take, use of vivid imagery)*	Not visible what other people do *(Social norm: Show relevant others or in-group members using engaging in the sustainable action consumer behaviour)*
	Reason for people to hand in unnecessary items is because they feel guilty to throw it away (not a sustainable decision) *(feelings and cognition: Guilt)*		
Drivers	Residents are willing to contribute to their municipality and share ideas *(Social norms: communicate what others are doing and approve of the desired sustainable behaviour)*	Knowing if certain action can contribute or not *(Individual self: Self-efficacy)*	Someone in close environment is participating in repair and reuse activities *(Social norm: subjective norm)*
	Being able to share passion and knowledge creates a rewarding feeling *(feelings and cognition: pride)*		Availability of activities and opporunities in neigbourhood
	Meeting works and creates new interactions with residents *(tangibility: concrete examples)*		

BARRIERS AND DRIVERS TO INVOLVEMENT WITH THE CIRCULAR CENTER

Behaviour=	Motivation	Capacity	Opportunity
Barriers	No social association with the circular center *(Tangibility: concrete communications)*	Knowing where you can go and what to do with your products *(Tangibility: concrete communications)*	Little known on what a circular center can mean to residents in communication *(Tangibility: concrete communications)*
	Local vs regional *(Tangibility; local impact)*		
Drivers	Residents are willing to contribute to their municipality and share ideas	Circular center name might be too scientific *(Tangibility)*	Social purpose of circular center *(Tangibility: concrete communications*
	Meeting works and creates new interactions with residents		Transparency, not providing clear accessible and transparent information *(Tangibility: concrete communications)*
	People like telling stories and exchanging their passion and crafts *(feelings and cognition: pride)*		
	People want to be surprised, looking for new unique stuff *(feelings and cognition: positive emotions)*		

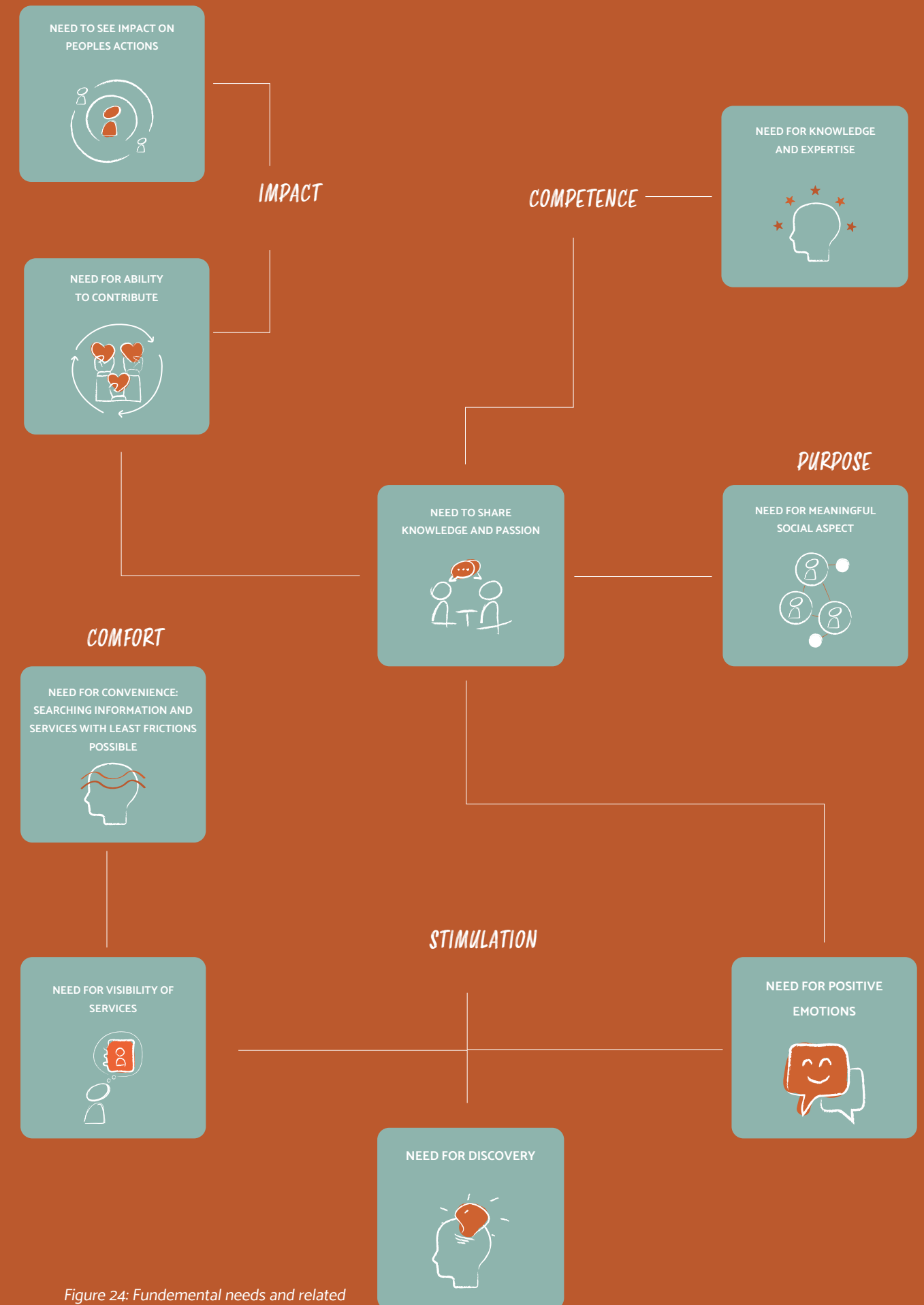*Figure 23: Barriers and drivers for behaviour change in the HUB*

Figure 24: Fundemental needs and related contextual needs

3.3 Main challenges resulted from barriers

Ch 1: Time and effort seen as a hinder

A major barrier for adopting a sustainable lifestyle in the research shown in chapter 2.3 is ignorance. It is highly dependent on the perceived effort and knowledge they have to put in. that might block their motivation towards these activities. The residents expressed two needs related to **competence**. The need for knowledge and expertise was mentioned as a way to have better access to information. They appeared to lack overview. The need was mentioned a lot during the interviews, creative session and surveys . Participants mentioned not being enough aware about other purposes of products. Knowledge in the practical form where which products should be but also informative workshops about reuse. An information desk for municipal affairs with all the information was also mentioned by a participant.

The main factor in the context of the HUB that causes this, was found to be **self-efficacy.** If residents do not know if his/her actions will make a difference in contributing to the reduction of waste, more mental effort is needed to make decisions, which might cause the motivation behind repair and resue actions to be less. When it comes to discarding used products, people will choose the easiest way possible with the least friciton. Adopting a sustainable lifestyle is perceived too time costly and expensive (Appendix C 9.4). Often, participating in sustainable initiatives, taking too much time and energy, not knowing what to do or how to particpate are the main factors mentioned that blocks people.

'I want to contribute but often I am too lazy and do not know where to start'

- Participant creative session

A need that relates to this is seeking for **comfort**. When residents cannot access the right information or do not know what to do with a product, they easily fall back in their habits. As a result the desired behaviour is difficult to execute. Thrift store owners are providing services that overcome this barrier to motivate residents to buy or deliver second-hand products. Another thrift store owners labels every product for residents. In a thrift store in Delft they have the **'huiskamer,** an inviting lunch and coffee corners with products to buy. She says that it is an absolute added value because it offers people some time to chat with each other. She also tries to make the products more valuable in the eyes of the consumer: *'we try to make as much effort as possible to make the environment attractive so that the quality is increased.'*   *- Owner thrift store Delft*

Furthermore the other need mentioned related to competence is the need to share knowledge and passion. This is also connected with the fundemental **impact** need. Connecting residents with different backgrounds (active residents, entrepreneur, thrift store owners,..) can create a stimulating environment where ideas can be exchanged. People love telling stories on what they are passionate about. Especially circular entrepreneurs showed enthousiasm to contribute and create impactm as mentioned in section 3.2**.** Not only do they want to create social impact but also inspire and motivate other residents to do the same. Only when working together, steps can be taken to a more sustainable future. Success stories are an example of things residents want to see in a circular center. These are good ways to create local impact, shown in chapter 2.3 It was observed that active residents love to interact with with other residents to inspire them and see the influence they could have.

Ch 2: Not seeing others doing the desired behaviour.

This challenge is related to the fundemental needs impact and competence. It is about **seeing the impact** one can have on another individual. The need is derived from the insight that participants lack the ability to showcase their actions to residents. As a result, the residents are not sufficiently aware of what is possible with their broken or used products or who they can contact.

Communicating actions by conveying concrete steps to make a difference can make it more easy and tangible for residents to participate . For residents already active in repair and reuse activities, it is about showing their contributions to residents by making it more visible. It also relates to the motivation of active residents to contribute and showcase their work (the need to see the impact on residents actions). Helping others while contributing to a sustainable world is key for active residents, circular entrepreneurs, owners of thrift store. They want to see results and the contribution of the municipality that serves a common goal. Residents that do not know how to contribute could benefit from this as they want to have a better overview of what activities and services are out there, seeing what other people do, which can foster a sense of competence.

This challenge can be explained by behaviour change factor **social norms.** Residents in the HUB are repairing and reusing. There are many great stories out there of residents helping each other and creating new products. However these is not made visible anywhere. How can residents be stimulated if they do not know how they should do it and they do not have other situations in mind to wich they can compare?

The impact of the people around you in changing your behaviour cannot be underestimated. The frameworks mentionend in chapter (Ch 2.3) all describe the social norm as an influence influence whether a person will take an effort to act more sustainable. Having a person who is actively repairing or reusing products for different purposes in your network that you can contact, can increase the likelihood of changing action towards more sustainable choices. That person receives products that he or she can use and is helping others, which creates a rewardig experience for both. The owner of the environmental garden said that back in the 'old' days people all knew each other and this had an effect on the recycling center as well. More people came.

Moreover, the seemingly little interaction between the owner and residents are motives to buy/donate second-hand items. It is the owner that encourages the residents, not the thrift store itself. All these interesting stories could motivate other residents as well but theire is no visibility for this, remarks the thrift store owner: *'lots of great stories but where do they go?'*

For these reasons it is valuable to look for ways that make the social norm visible for all the residents. This manner non-active residents can actually see that repairing and reusing products are much more common and not that difficult to perform.
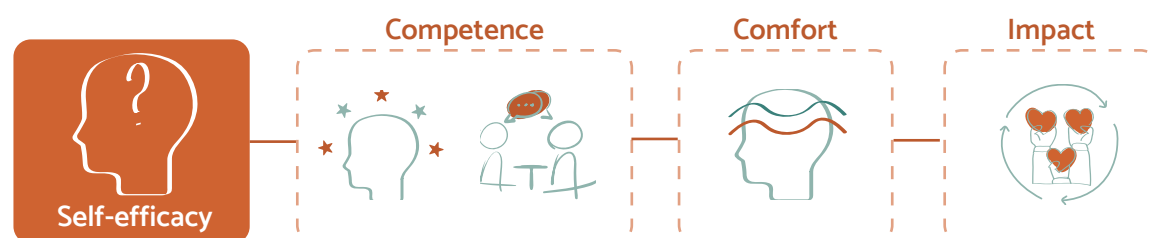
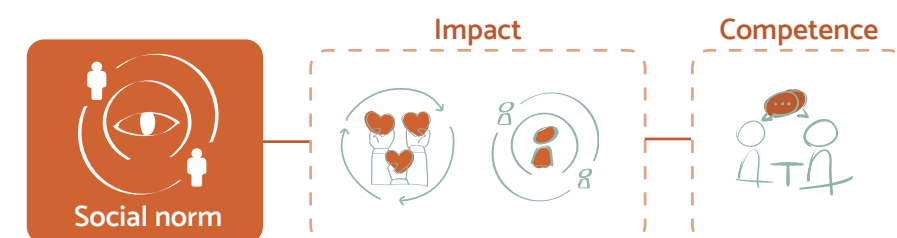*Figure 25: Behaviour change factor and related needs for challenge 1*

Figure 26: Behaviour change factor and related needs for challenge 2

Ch 3: No social association with the circular center

Residents love to engage in activities with a **social purpose** and coziness, shown in the results of the creative session in appendix C10. he main desire that residents expressed are related to intangbles, namely the social aspect; wanting a meeting place where people can connect with each other That is also visible in their desires for the circular center, wanting to have a meeting place and interactions with other residents. In contrast, they do not associate this social element with the circular center yet (appenidx C4.9). Intrestingly, that social goal of meeting people that are doing the same activities and have the same interest is also what the HUB circular center envisions. That might be because different names of the circular center are used in communication towards residents and the social aspect was not mentioned. It could also be that people see the circular center as still a more scientific term rather than the social aspects it can include. That might add to the confusion on the meaning of the center to residents. A residents mentioned not having heard about the idea our the plans to develop such a center. Another element that contribtues to this is that there is no visual identity or consistent communication of the circular center to which residents can relate.

On top of that, from the HUB survey residents had to fill in the first thing that came to their minds when hearing about the circular center. The association of a meeting place, again does not come up here. The name of the circular center might also be a bit confusing for some as is sounds too theorethical or scientific.Thsi could be explained by the behaviour change factor **tangibility**. Especially in sustainable behaviour change, clear language is important to make it clear and tangible for residents so that it does not seem as something far away (White & Habib, 2018).

The fundamental need of **stimulation** was also described in the results. That resulted from the insight that the current recycling centers are seen as a place that you have to visit, not as a place that you want to. People are just relieved when they can dump their waste fast. The recycling center manager stated that when residents visit the recycling center they associate it with a waste drop-off point. They already see your waste as useless before entering. (Zwager, 2020), (Thijssen, 2020).

Residents also described the atmosphere that is not inviting as a hinder so they prefer going to another thrift store a bit further away, which was Rataplan for them. It shows the importance of having a place that is inviting and makes it easy for residents to visit it. The main reason that residents visit thrift stores is because their need for discovery (appendix C2).

Working towards a common goal can create a feeling of connectiveness, shown as a principle to create attractive communities in chapter 2.3 The Circular center as being a place to meet and interact with like-minded people is a result of needing a social aspect. That aspect motivates people to come to the center and make use of it. Otherwise it would be just a combination of different activities that already exist These needs show that focusing on stimulating experiences with positive emotions could attract and resonate with residents so that they will come to the center.

Figure 27: Behaviour change factor and related needs for challenge 3

Ch 4: No concrete communication on a regional level

This challenge came from talking to residents directly and the HUB survey. It refers to a phenomena that exists within the HUB context, called 'colour locale'. Since the fusion of the municipalities there came concerns on the effectiveness of a regional BUCH organisation. The added value that the organisation has such as working on regional challenges is not yet clearly visible for the municipalities (Krom, 2022). For this reason it might be that they want to gard their independence as a municipality and show their colour locale. In the ambition document of the BUCH they also adress this as an factor to safeguard. The regional challenges are communcitated only on the local platforms as a regional one does not exist. The buch strives to create harmony and not the will to work together since the BUCH organisation is now seen by the municipalities mainly as a means to achieve the individual goals of the municipalities (van Veller et. al, 2020)

From the perspective of residents this can be seen as well. There exists some fear that local circular activities will be lost when setting up a circular center. That might also be explained because residents think the distance to go to the center would be too great. As a result, there is a need to organise local activities as well. There was also disinterest in connecting with residents from other municipalities because residents do not feel connected on a regional level. A residents from Uitgeest mentioned the residents of Bergen as having a comepletely different mindset. Another residents who is actively involved in local politics, he does not believe that the center will function because of the different local parties involved. He finds the current meetings already difficult to maintain. Politically it will be uncontrollable because of the local parties involved that will go against each other, he says.

'I am sceptical of the BUCH municipalities working together on the circular center because you have these different local parties involved that can go against each other. '

Resident Uitgeest

If the circular center would need to function on a regional level, a unifying messagewould be beneficial to get residents on board while keeping in mind the colour locale.

Residents seem to want **stimulation**. The need for visibility of services results from the insights that residents are not sufficiently aware of the possibilities they have when it comes to donating, repairing or buying products. The reuse or repair services a 'green' man that is handy or someone in your network could be visible for one family or an individual but not for other residents. Therefore some are not aware what they can do with a product and perhaps just throw it away while the handyman or circular entrepreneur or other stakeholders could still benefit from this. From the active residents and circular entrepeneurs, thrift store owners it is important to make their actions visible as wel by for example showcasing their product in a pop-up store or commnuicating their involvement with the circular center in their stores. Having a clear overview of who is involved and who can offer which service and their contribution can perhaps help residents in making better choices that result in less waste as products are staying in the loop. showing residents how thy can make a difference, even by just small actions, can increase a sense of self-efficacy, relating to ch 1.

These challenges can be explained by the behaviour change tool **tangibility.** It seems that there are challenges in place to communicate regional challenges on a regional level due to the colour locale. That might be a hinder for residents to visit the circular center as they do not feel connected on a regional level yet. Therefore it can be valuable to create a feeling of regional connection while keeping true to the 'colour locale'.
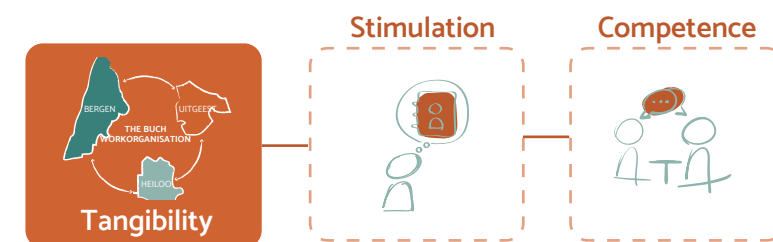

Figure 28: Behaviour change factor and related needs for challenge 4

3.4 Opportunities resulted from barriers and drivers

O1: Stimulating environment as a motivation to visit the recycling center (Tangibility on the social factor, showcasing meaning of circular center)

Residents expressed their wish for inspiration and a stimulating environment in the circular center. The intangible experience of having a meeting place and a cozy, inspiring environment might motivate residents in the first place. Activities of repair and reuse might be of second order. The drivers that work to stimulate residents in practice to buy or sell/donate products are making the environment inviting and organised. These positive emotions can be achieved by for example linking residents to create an inspiring place where residents can exchange knowledge and help each other in participating in circular activities. Events can be used to create such environments such as a dutch design event, vintage sale, flea market waste museum. By creating an environment that in inspirational, the HUB can reach more residents as some are not yet having the intention to repair or reuse. On top of that by stressing the tangibility factor, residents might understand the added value of the circular center and the meaning. A way to tackle this is by focusing on tangibility, giving concrete information to residents on what the circular center could be and mean for them. The tool tangibility also describes employing concrete communications.

O2: Make it easy for people to participate giving them the right expertise and knowlegde

To overcome the barriers related to challenge C1, it could be valuable to focus on a tool of self-efficacy; making it easy for residents and giving them the mindset that their action contribute. Residents maybe do not know that a small action like reuse and repair is already a circular activity. However because of the ignorance related to self-efficacy and the invisible possibilties of what they can do with their products, people are not able to get the right motivation to start changing their intentions into concrete actions. The intrinsic motivation is not yet common. It can be done by making the behaviour seem less costly, less effortful to do. Giving residents the right expertise and knowledge to start with. It can also relate to opportunities to facilitate that residents can access the required expertise and knowledge, which can be done by communicating the steps to make a difference, highlighting self-efficacy. Self-efficacy plays an important role for residents who are not experienced with these kind of activities. A trigger can be useful to make their intentions more conscious. On top of that it could be useful to make the activities of other residents that are already participating more visible, so that they can influence the decision of another individual to change their intentions into actions
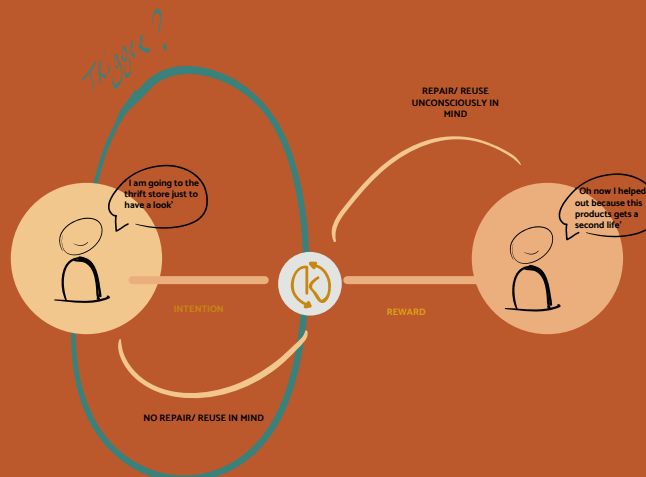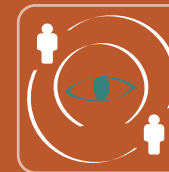

Figure 29: Possible trigger for changing residents intentions

O3: Towards a circular norm by connecting residents and therefore showing what others are doing (social norm)

The third opportunity relates to C2. .The social norm as a tool can greatly influence someone's behaviour. Residents can be influenced if someones else in their environment does repair or reuse activities and if they can see these examples online and offline. To influence the behaviour, group norms can be formed to encourage residents in continuing their environmental behaviour because residents see what others are doing. This manner residents can also be connected, as residents desire.

Climate change is often seen as a distant event. Communications that make it seem relevant to the local community and social groups can help promote action (White & Habib, 2018). Making visible what other residents are doing could be an answer to the need of residents to have more visibility and overview. Visibility of the parties involved for example a shop with recycled products from partners or showing what services other entrepreneurs/entities offer, visisbility on the service of where you can go for repair and reuse. Creating a better overview of what is already out there can perhaps stimulate residents to overcome challenge 1 as well because it would reduce the inconvenience they currently experience.
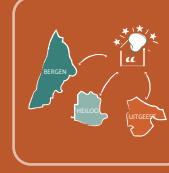
O4: Connecting local initiatives in municipality for reuse and repair to the circular center to show possibilities on multiple places

The last opportunity results from C4, not having concrete communication on a regional level. Residents might be sceptical on the efficiency of the BUCH because it is not yet communicated what is being done to achieve regional challenges together. This raises another question regarding the opportunities in changing residents behaviour. Can the BUCH workorganisation facilitate what residents need if the colour locale is strongly present? In chapter one the relation between the municipalities and residents could be improved. A key aspect of this is offering clear and consistent communication. That might still be an improvement point for the circular center because a unifying message is needed to get residents involved from the beginning and support residents in changing their behaviour. This fear can be answered by taking into account the local desires, but still create a regional functioning circular center that residents want to visit. Connecting local initiatives to the circular center could also create extra visibility for residents so that they know which possibilities they have (relating to Opportunity 1).

CONCLUSION WHAT ABOUT RESIDENTS: ANSWERING RQ1

To answer RQ1: what do residents value in the circular center, several research activities were performed, ranging from qualitative interviews, creative sessions, observation and two independent surveys. By combining the findings from the results and putting them in the triade model, barriers and drivers to circular activities and the circular center are found. the The tools from the shift framework were then applied to the specific barriers and drivers to get a comprehensive overview. The opportunities and challenges were derived from this. Finally the findings were clustered again, based on the 13 fundemental needs by fokkingma to come up with on the one hand the universal needs that are present among residents and on the other hand the context-specific needs that explain in more detail what they want in the circular center and for repair and reuse activities. The following main conclusion arose:

1. View on circular activities: current behaviour of repair and reuse

2. Perspectives on circular center: their wishes and needs

When residents visit places that have to do with repair or reuse such as thrift store, they do this for the experience associated with it; a surprising, fun experience because you never know what you will find in a thrift store. Owners try to stimulate residents mostly by making the store attractive, clean and organised so that the perceived quality of the products is higher, and therefore making it easier for residents to buy products. More importantly, the little interactions with residents is a great driver for motivation to stimulate them. That also relates to the influence of a person in your environment, the subjective norm. Such interactions with people can influence the decision making process whether or not to participate in reuse and repair activities and as a result can increase the motivation to change someone's current behaviour. These drivers can be used to overcome the perceived barriers such as Ignorance, time and effort, feeling quilty to throw things away, not knowing other possibilities to deliver products, not knowing what other residents are doing and not having the ability to meet residents locally.

What residents especially seem to desire in a circular center also relates to intangible experiences such as a meeting place where they can connect over a cup of coffee. The environment should be fun and inspiring. It should be a place that you want to visit, not because you have to. Moreover, the social aspect can be an answer to the the concern of the center just being a combination of already existing activities, resulting in the local activities will dissapear. That social aspect could be made more visible to residents to create more meaning to the circular center of what it could be. That could make it more understandable and tangible for residents to associate with. These drivers could again be used to overcome the perceived barriers related to the circular center such as meaning of the circular center, no association of the social aspect with the circular center and the colour locale.

PUTTING THE PIECES TOGETHER

Barriers for repair and reuse

Behaviour: =

Motivation:
- Time and effort involved in repairing and reusing it yourself *(habits)*
- Residents feel guilty to throw it away (not a sustainable decision) *feelings and cognition: Guilt)*

x

Capacity:
- No knowledge about possibilities where to deliver
- products. *(Tangibility: concrete communications:)*

x

Opportunity:
- Not visible what other people do *(Social norm)*
- Availability of activities and opporunities in neigbourhood

Drivers for repair and reuse

Motivation:
- Residents are willing to contribute to their municipality and share ideas *(Social norms)*
- Sharing passion and knowledge creates a rewarding feeling *(feelings and cognition: pride)*
  Meeting works and creates new
- interactions with residents *(tangibility: concrete examples)*

x

Capacity:
- Knowing if certain action can contribute or not *(Individual self: Self-efficacy)*

x

Opportunity:
- Someone in close environment is participating in repair and reuse activities *(Social norm: subjective norm)*

Barriers for the ciruclar center

Behaviour: =

Motivation:
- People do not associate a circular center with an inviting and cozy meeting place *(Tangibility: concrete communications)*
- Local vs regional *(Tangibility; local impact)*

x

Capacity:
- The name circular center might be too scientific. *(Tangibility: concrete communications)*

x

Opportunity:
- Little known on what a circular center can mean to residents in communication *(Tangibility: concrete communications)*
- Transparancy, not providing clear accessible and transparant information *(Tangibility: concrete communications)*

Drivers for the ciruclar center

Motivation:
- Residents are willing to contribute to their municipality and share ideas *(Social norms)*
- Meeting works and creates new interactions with residents
- People like telling stories and exchanging their passion and crafts *(feelings and cognition: pride)*
- People want to be surprised, looking for new unique stuff *(feelings and cognition: positive emotions)*

x

Capacity:
- No knowledge about possibilities where to deliver
- products. *(Tangibility: concrete communications:*

x

Opportunity:
- Showing the social purpose of the ciruclar center *(Tangibility: concrete communications)*

Challenges

C1: Time and effort seen as a hinder to participate in circular activities: *(habits, self-efficacy)*

C2: not seeing other doing the desired behaviour *(Social norm)*

C3: No social associationw ith the circular center *(tangibility)*

C4: No concrete communication on a regional level *(Tangibility)*

Opportunities

O1: Stimulating environment as a motivation to visit the recycling center *(Tangibility on the social factor, showcasing meaning of circular center)*

O2: Make it easy for people to participate giving them the right expertise and knowledge

O3: Towards a circular norm by connecting residents and therefore showing what others are doing *(social norm)*

O4: Connecting local initiatives in municipality for reuse and repair to the circular center

Show meaning of circular center, focus on positive emotions

Make visible what other residents are doing

Giving residents sense of self-efficacy

Create regional connection

DEFINE

In this phase, the insights from the discover phase are analysed and narrowed down to find the opportunty gap that needs to be answered in this thesis. the defined opportunity gap will then lead to a design problem and future vision that serve as a framework to search ideas in.

04: SETTING THE DESIGN FRAMEWORK

In this phase, the insights from the discover phase are analysed and narrowed down to find the opportunity gap that needs to be answered in this thesis. The defined opportunity gap will then lead to a design problem and future vision that serve as a framework for concept development.

Introduction

This chapter introduces the transition of two phases, namely discovery and develop phase. Before the solution can be developed, a review of the discovery phase in relation to the solution phase is made. From this, the most valuable opportunities can be defined to take further in the design process. First the opportunity is defined wherafter research question two can be answered: What could be the defined relationship between residents and the circular center? After this, a reframed design brief is created to form the basis for developing the solution.

4.1 Defining the opportunity gap

Before defining the opportunity gap, a review is made on the key outcomes for this thesis. In the theory of change this is called the 'impact ladder'. The step is done to check whether it is still the right one to solve in this thesis or did it change along the way. The impact and key outcome serve as a North star in the design challenge, helping to ensure focussing on the defined goals (Designkit, 2021). The long-lasting impact for which this thesis aims to contribute is: residents in the HUB are actively involved with the circular center and repair and resue activities and are living a conscious sustainable lifestyle. This would be the ultimate future vision for the hub. The near-term solution that should be observable is discovering in what kind of way residents could be involved with the circular center (answering RQ3). The intermediate outcomes refer to smaller actions that are needed to achieve the primary outcome. These are also called shifts. These shifts form the basis of ideation. At the end of the design process the output refers to the solution that is deisgned. In this case: a design that fosters more involvement between residents and the circular center.

Impact ladder			
Impact	Primary outcome	Intermediate outcomes	Outputs
Residents in the HUB are actively involved in repair and reuse practices and are living a conscious sustainable lifestyle	Discovering in what way residents can be involved with the circular center	Residents can associate the circular center with the social aspect and meaning it can have (tangibility)	A design that fosters more involved between residents and the circular center
		Residents have the ability to contribute and know how (self-efficacy)	
		Residents can see what others are doing in terms of circular activities (social norm)	
		The buch can facilitate the needs from the residents by including colour locale while creating regional connection (tangibility)	

Table 4; impact ladder for the circular center

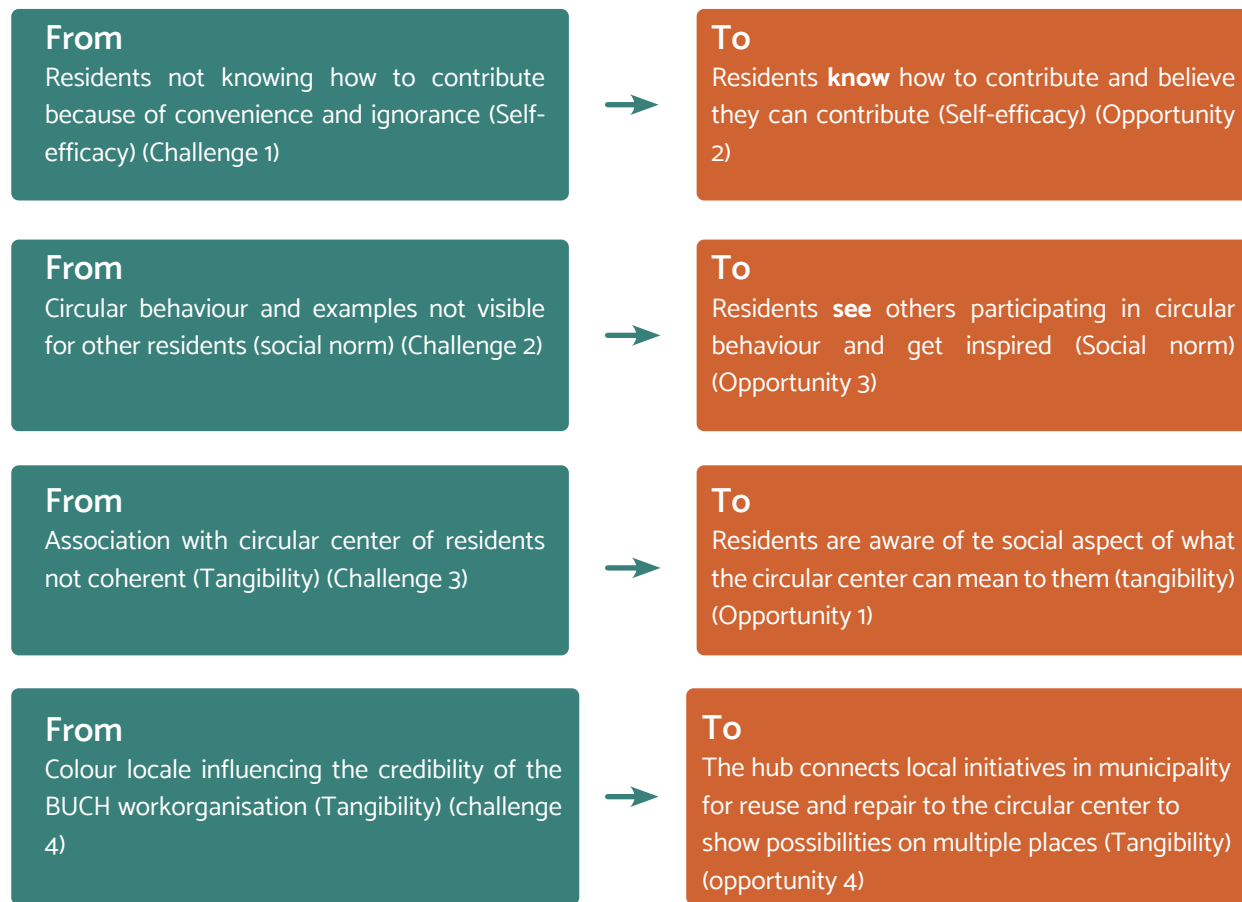| From	To
From Residents not knowing how to contribute because of convenience and ignorance (Self-efficacy) (Challenge 1)	**To** Residents **know** how to contribute and believe they can contribute (Self-efficacy) (Opportunity 2)
From Circular behaviour and examples not visible for other residents (social norm) (Challenge 2)	**To** Residents **see** others participating in circular behaviour and get inspired (Social norm) (Opportunity 3)
From Association with circular center of residents not coherent (Tangibility) (Challenge 3)	**To** Residents are aware of te social aspect of what the circular center can mean to them (tangibility) (Opportunity 1)
From Colour locale influencing the credibility of the BUCH workorganisation (Tangibility) (challenge 4)	**To** The hub connects local initiatives in municipality for reuse and repair to the circular center to show possibilities on multiple places (Tangibility) (opportunity 4)

Figure 31: the key shifts that this thesis is trying to solve

In figure 31, The shifts that this thesis is trying to solve to get to more involvement with the circular center are written down. These are the result of the discovery phase and are the challenges and opportunities reframed in shifts. To come up with a design challenge the four shifts are reviewed on the possibility how these can be facilitated in the HUB context. From the different results of the discovery phase, it was found that the above presented key shifts form the base of the most promising opportunity.

Looking at the different tools that are most present in the barriers and opportunities in the concluding chapter 'putting the pieces together', three tools are key. Namely the social norm tangibility and self-efficacy (see figure 32). These three tools are both about creating visibility for residents so that they understand what others are currently doing, showing concrete examples they can relate to, linking residents to each other to create stories and little interactions and what the circular center can mean for them.

These interconnected challenges will form the basis for concept development as they are the main factors that are to be achieved. The opportunity lies in connecting these key insights and making them visibile for residents. Because if the circular center will work, highly depends on how connected residents feel themselves with the buch as wel since it will be organised on a regional level. These insights sparked the following vision for residents and the HUB circular center, presented on the following page.

Visibility

Social norm: not visible what other residents are doing

Tangibility: No social meaning of the circular center and no regional communication

Linking residents

Visibility

Self-efficacy: little understanding that small actions can make a difference

Figure 32: Three interconnected challenges

SOLUTION OPPORTUNITY

Visibility

Social norm: showing what other residents do for repair and reuse

Tangibility: making the circular center and repair + reuse concrete and local and link on a regional level to the circular center

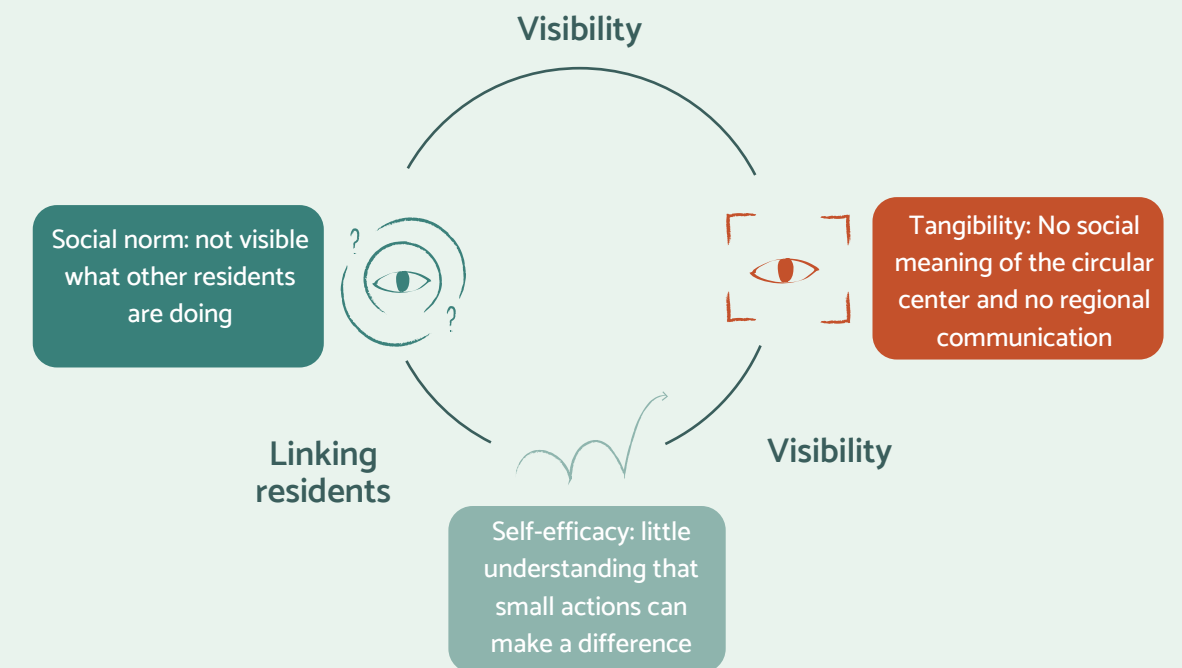Linking residents

Visibility

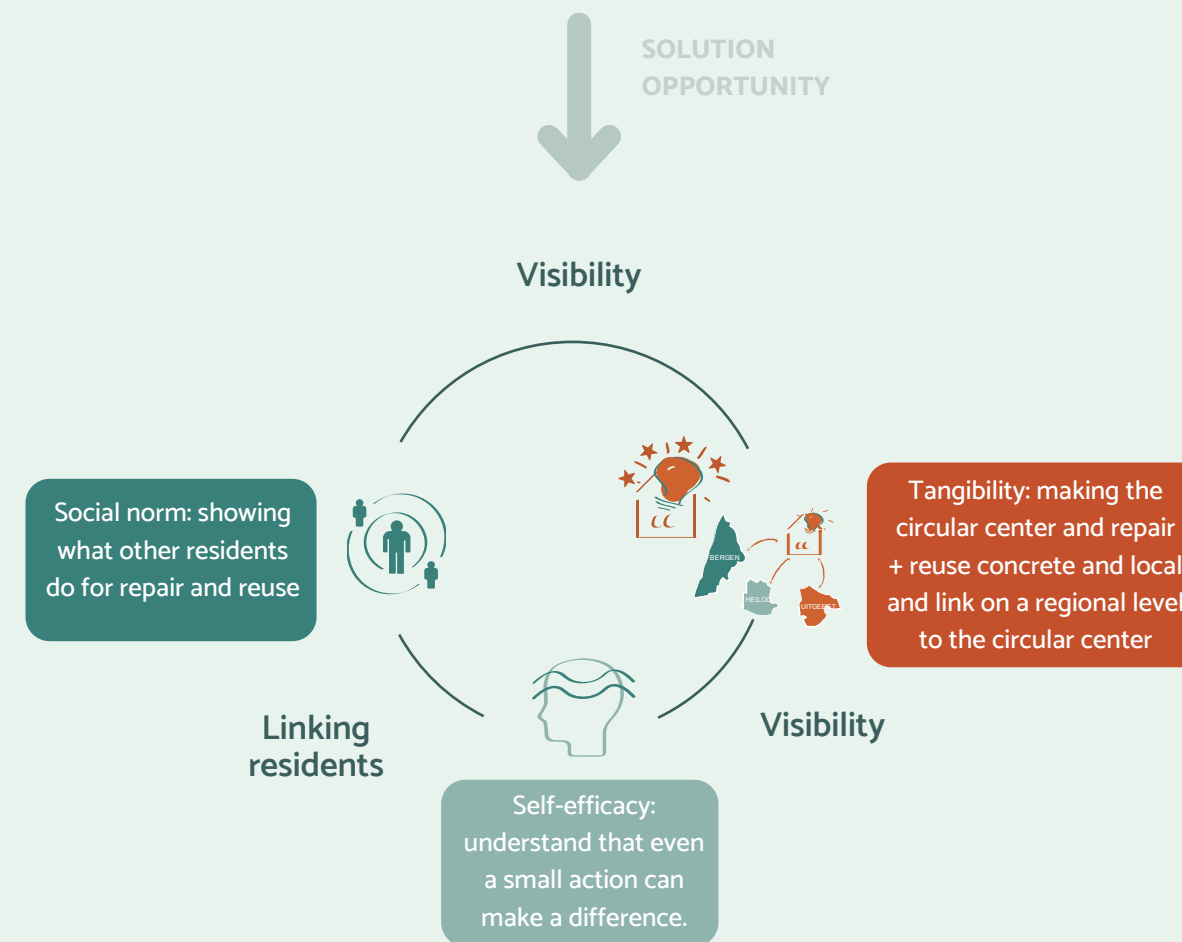Self-efficacy: understand that even a small action can make a difference.

Figure 33: Three interconnected insights and related opportunities that are aimed to be achieved in the solution

The envisioned relationship between residents and HUB center

To answer research question 2: *'how can the relation between the residents and the circular center be defined?'* a closer look has been taken on the derived insights from the disovery phase with regard to the relationship. The challenges in figure 33 are interconnected in a way that they create an interesting opportunity that can enhance the relationship between the residents and the HUB center. From the discovery phase it was found that residents also share passion and stories among each other that are not visible for the broader public and could be valuable. So not only should the relationship between residents and the hub be taken into account but also the one between residents themselves. Therefore the following envisioned relationship was established:

Creating a symbiotic relationship between residents themselves and the hub center (figure 34). The hub acts as a facilitator of interaction between residents so that stories and good examples can thrive in the community and residents can have the feeling they can contribute to a circular economy while participating in social activities. For instance the circular center is the go-to place for residents where they can find information regarding repair and reuse, but also a place that connects residents on a regional level, relating to opportunity 2: *Make it easy for people to participate giving them the right expertise and knowlegde* and 4: *connecting local initiatives in municipality for reuse and repair to the circular center to show possibilities on multiple places*. It is about being a center that connects residents that were not connected before and make their activities of repair and reuse visible to each other (social norm). The circular center could be therefore a place where these activities and people come together, where new interactions between residents are made and products can be showcased.

This relationship takes the power of the residents themselves into account since you do not have to be a circular entrepreneur to be able to contribute, relating to opportunity 2. Even seemingly small actions made by many can have a big impact. Making this relationship visible, residents can better understand the meaning circular center can be a social place as well where people meet each other over a coffee (tangibility). On top of that they have the opportunity to see what other residents are doing concerning repair and reuse.
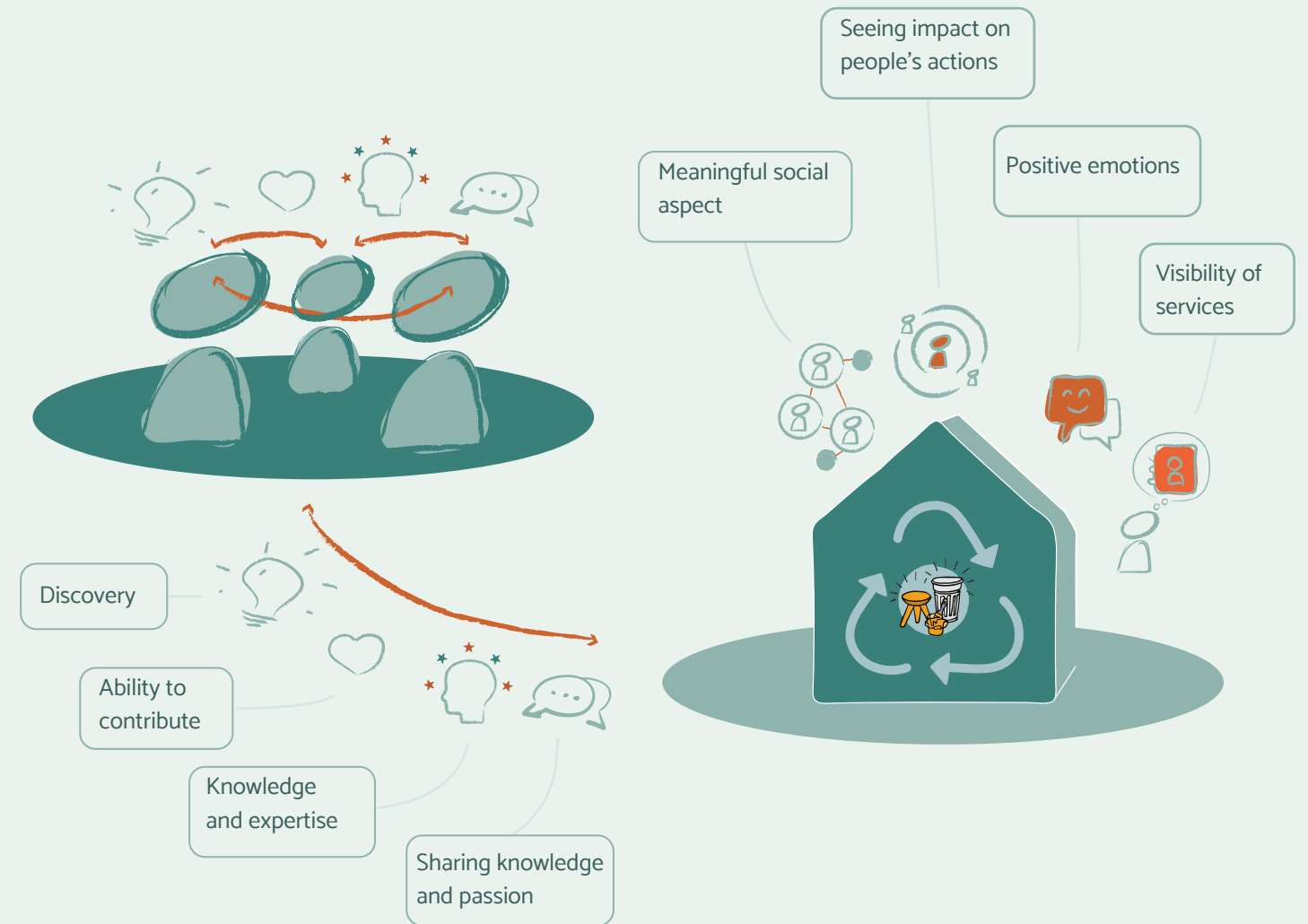

Seeing impact on people's actions

Meaningful social aspect

Positive emotions

Visibility of services

Discovery

Ability to contribute

Knowledge and expertise

Sharing knowledge and passion

Figure 34: The envisioned relationship

4.2 Reframed design brief

In order to design a concept that makes sense, it is important to define a design brief that formulates the main problem to be solved, the design challenge to be adressed, the intented purpose, the envisioned benefits, what to avoid and which principles can guide the ideation phase. The aim for this is being a guide for the designer throughout the following phases.

Problem statement

The initial question that initiated this graduation project was about how residents can be more involved with the future HUB circular center. This so that residents want to participate in reuse and repair activities and therefore more conscious of their current behaviour. However it was discovered that to be able to involve residents, the BUCH needs to communicate clearly what a circular center can mean for residents and how residents can contribute to repair and reuse practices. From the interviews it appeared that the concept is generally loved but it still remains a thing in the future because there is nothing physical yet. Some residents did not even heard that a circular center was a plan of the BUCH organisation. On top of that, it appears that residents are not sufficiently of their actions and if they are perceived as sustainable (self-efficacy is lacking). Currently, there is not a common identity created for the circular center, which is a vital element for a community (ch 2.3). In addition, the discover phase showed the need for more visibility on what people have to offer, practical examples and inspiring stories. The phase also identified that you do not have to be a circular entrepreneur to be able to contribute. There are many residents who are actively involved in repairing, reusing or upcycling products but may not see themselves as possible contributors within a broader network.

Looking at the three key insights from a new perspective results in the following problem statement on the right page. In order to establish a symbiotic relationship, the hub can focus on two behaviour change tools, tangibility and the social norm. These, when applied, could greatly influence residents behaviour. To support these two tools, the following design statement in establised.

Design statement

Based on the problem statement, the design statement is defined on the right page.

WHY

People need to be made aware again that there are several possible ways to contribute to a circular economy when it comes to reuse and repair. With reuse, awareness is still needed about the fact that you as an individual can contribute with small steps (giving a sense of self-efficacy). Realizing that a product can still be valuable to others also plays a role in this. First step: to wake people up and be curious about the circular center. This can be reinforced because people are not yet sufficiently aware of this. creating incentives and direction where people should go are important in transition processes to circular economy (Waterstraat, 2020). A trigger is needed to show people that things can still be valuable to someone else and that an impact can be made with this. The buch should show to the residents that repair and reuse activities are much more common then they think (making the social norm visible). The more examples are shown to residents, the more they might think that it occurs because they can recollect more examples on the top of their mind.

PROBLEM STATEMENT

How can buch residents feel feel more involved with the circular center and have the ability to contribute to repair and reuse activities by making the social aspect of the CC tangible and the social norm visible? This to help the HUB circular center in establishing a symbiotic relationship between the center and residents among each other.

DESIGN STATEMENT

To design a strategy (WHAT) for the circular center (WHO) that uses the social norm, and tangibility as a behaviour change tool to show residents the meaning of the circular center and possibilities for repair and reuse activities that they can participate in (HOW). which allows them to have a sense of self-efficacy.

INTENDED PURPOSE

1. Showing what are residents are currently doing around repair and reuse (social norm), gives residents the ability to think in a more circular way because now they now how they can contribute (sense of self-efficacy)

2. Showing that the circular center is also a social meeting place, The circular center can become something tangible but also something that people find attractive

WHAT TO AVOID

During the concept development, attention should be paid to advocating one thing and at the same time doing something in the environment that contradicts this. (Teimeijer, 2011)

ENVISIONED BENEFITS

Allowing residents:
- To have the ability to contibute and understand that
their contributions are beneficial for many people, even if it is a small action
- To get inspired and share stories among each other
- To discover new ways of upcycling, repairing or reusing their products

Allowing the BUCH
- To create a common language that resonates with residents
- To show the BUCH's willingness to contribute to a circular economy so that residents can trust the center
- To put participation that is highly spoken about in their official documents into action

4.3 List of requirements

A list of requirements is presented below to serve as a guid for the following design phases. It shows requirements that needs to be taken into account while developing the solution.

HUB circular center

- It should encourage residents to discover new ways of repairing, reusing and upcycling products
- It should take into account the political elements that can influence the design: these elements involve not communicating from the HUB identity but from the local municipalities of Bergen, Uitgeest and Castricum

Residents

- It should be a design that supports discovery, enthusiasm competence and learning a new habit
- It should be a fun experience that does not require too much mental and physical effort. It should be attractive and stimulate enough attention
- For repair: residents do want activities that involve expertise and inspiring examples
- For upcycling: residents wish to see inspiring examples of what they can do with their

products

Next collaborator (as Selab will not work on this project for an indefinite period of time)

- It should be a design that can be build upon by another collaborator to develop the concept further with success.
- It should be a complementary design to other groups or stakeholders that are working on the topic of the the circular center

4.4 Green design instructional cards as a guide

In order to develop environmentally responsible products and services, Kalviainen (2020) has created 'green instructional cards' based on her research that support customer-oriented design and development (Palokangas et al., 2021). The cards can be used as a a backbone while developing the solution from the customer's perspective. They emphasis what might be important for residents in making sustainable decisions.

PRODUCE PERSONAL MEANING AND VALUE

MAKE ABSTRACT BENEFITS AND DISADVANTAGES CONCRETE

PROVIDE INFORMATION THAT IS UNDERSTANDABLE AND COMPARABLE TO SOMETHING FAMILIAR

NORMALISE SOLUTIONS THAT ARE ENVIRONMENTALLY RESPONSIBLE

MAKE ENVIRONMENTALLY SUSTAINABLE SOLUTIONS EASY TO FIND AND USE

MAKE ENVIRONMENTALLY SUSTAINABLE SOLUTIONS PLEASANT AND ENJOYABLE

VISUALISE ENVIRONMENTAL THREATS AND THEN PROVIDE PRACTICAL OPTIONS

HELP CONSUMERS BY PROVIDING INFRASTRUCTURE AND REGULATIONS THAT SUPPORTS SUSTAINABLE CHOICES

PUTTING THE PIECES TOGETHER

MAIN CHALLENGES TO BE SOLVED

Social norm: circular behaviour of other residents is not yet made visible for each other.

Sub-challenge: residents do not know how they can contribute because they lack concrete examples

Tangibility: the circular center is not yet associated with a social meeting place

Sub-challenge: challenge of giving clear direction and consistent communication from the BUCH

Sub-challenge: Colour locale influencing the functioning of participation practices in the BUCH

Self-efficacy: residents are not aware if their small actions contribute or not

Sub-challenge: residents are not aware if their small actions contribute or noy

1

Showing what other residents doing for repair and reuse activities so that residents know that these actions occur more than they think + they understand small actions can already make a difference (self-efficacy).

2

Showing that the circular center is also about meeting each other (tapping into the social aspect). Also, connecting local initiatives in the municipalities with the circular center to stimulate regional involvement.

Using behaviour change tools social norm , tangibility and self-efficacy as main focus points

Making these elements visible to enable a symbiotic relationship with residents and the HUB circular center

DEVELOP

In the development phase, the solution direction from the reframed design brief was further explored. Additional iteration was done on the desired solution direction to find the root cause that can be solved in this thesis.

05: CONCEPT DEVELOPMENT

■ ■ ■

With the reframed design brief in mind described in the previous chapter, this chapter introduces the process of the defined opportunity direction to the final solution.

Introduction

In this chapter, exploration is done to process from idea to the final solution. For this several iterations were made on the reasoning of the strategy to end up with the concept, presented in the next phase. Throughout the project several changes were made to the designed solution.

5.1 From idea to conceptualisation

An explorative process of brainstorming with another student on the possible design directions was done to start the ideation process, shown in appendix D1.2. The main goal for this was to reassess what the challenges and major opportunities for the HUB circular center could be. That resulted in a promising idea direction which will be explained here. The idea directions were discussed and iterated during the whole process as more insights emerged from talking to different people involved in this project. That resulted in a shifting focus throughout the development phase. After this diverging part, the chosen idea direction evolved more into a conceptualisation process. The conceptualisation process involved iterating on ideas that could build upon each other to form one concept.

Initial idea direction

HOW CAN WE ENHANCE THE THREE INTERCONNECTED OPPORTUNITIES

By looking back at the three interconnected opportunities described in chapter 4 (Ch.4.1) , a new perspective on the problem is created in which the solution can be approached. It allowed the designer to see in a visual manner what the root cause can be and how to solve this. That is important because developing solutions without including the root causes will result in solutions that are not linked to the factors that drive them (Cash et al., 2022). Visibility is needed to show the social norm and make the circular center something tangible. How can reuse and repair become the norm if actions are not made visible to the residents? How can the circular center become something tangible if residents do not have clear information on the development and meaning of such a center? These questions involve thinking how the BUCH can facilitate these opportunities.
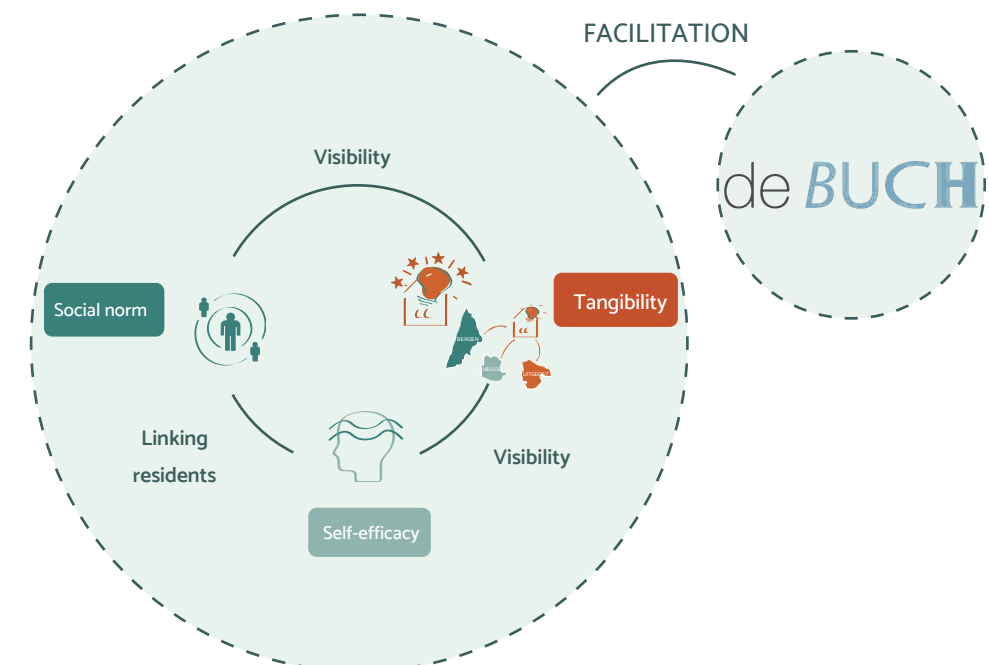

Figure 35: Looking for ways to facilitate the three interconnected opportunities

LOOKING BACK AT THE BUCH FOR FACILITATING THE SOLUTION

Challenges from the BUCH on communicating clearly and consistently have created doubts in the minds of residents about the efficiency of municipalities cooperating. That might be translated into an opportunity for the BUCH to work on improving communication towards residents and the circular center. That shows that there is a promising direction in creating a strategy aiming at branding and communication.

Currently residents do not have platforms or opportunities to share their ideas, connect with each other for repair and reuse. There is no regional platform of the BUCH that gives information on the circular center and where residents can find related information that is meaningfull for them. For example there is no regional participation platform, only for each municipality the ikdenkmeeoverberge.nl where the HUB survey was posted. Most of the residents found the information on the survey via the 'Huisaanhuisblad', Social media or the local newspaper.

If the BUCH wants to achieve their goal of being among the best service providers in the netherlands by offering services close to residents and reflect their motto 'be the inhabitant' they will need to involve their residents. This because residents want to feel heard and listened. Offering clear and transparent information can help overcome his issue and make residents more connected to the the BUCH on a regional level, as this is not yet happening.

It is needed so that residents can have more easy access to platforms and ways to contribute and feel more connected to the circular center. Otherwise residents cannot be involved if they do not have opportunities to do so. The power of good marketing and communication cannot be underestimated says the manager of recycling center Almere. Residents need to be woken up about the circular center and curious because it is not yet open and people must and want to be more involved in this. Making people aware from the beginning is very important and also comes from Almere's good practice.

The goal of the circular center is to create a learning community, but if there is no identity yet, how can people join or want to be part of that community? The circular center is not yet in place: to get people on board, unambiguous communication and direction are needed (focus on tangibility) On top of that to create a community feeling where stories, activities around repair and reuse can thrive, a strong identity is needed. It plays a role in making residents wanting to be part of it. In a presentation about the circular center, the project leader states: "With the Circular Craft Center, we want to focus on visibility, participation and increasing awareness."' This is difficult to achieve if there is no clear communication that involves people in the development of the circular center.

Therefore the opportunity lies in connecting these key insight by means of creating visibility on the interconnected insights **by means of a communication strategy** that could help to make these visible for residents and give them an opportrtunity to participate. It adresses the relation between the BUCH and residents that could still be improved and can aim to create an interaction between these two. It can be a stimulating support that aims to create the defined symbiotic relationship. Because if the circular center will work, highly depends on how connected residents feel themselves with the buch as wel since it will be organised on a regional level.
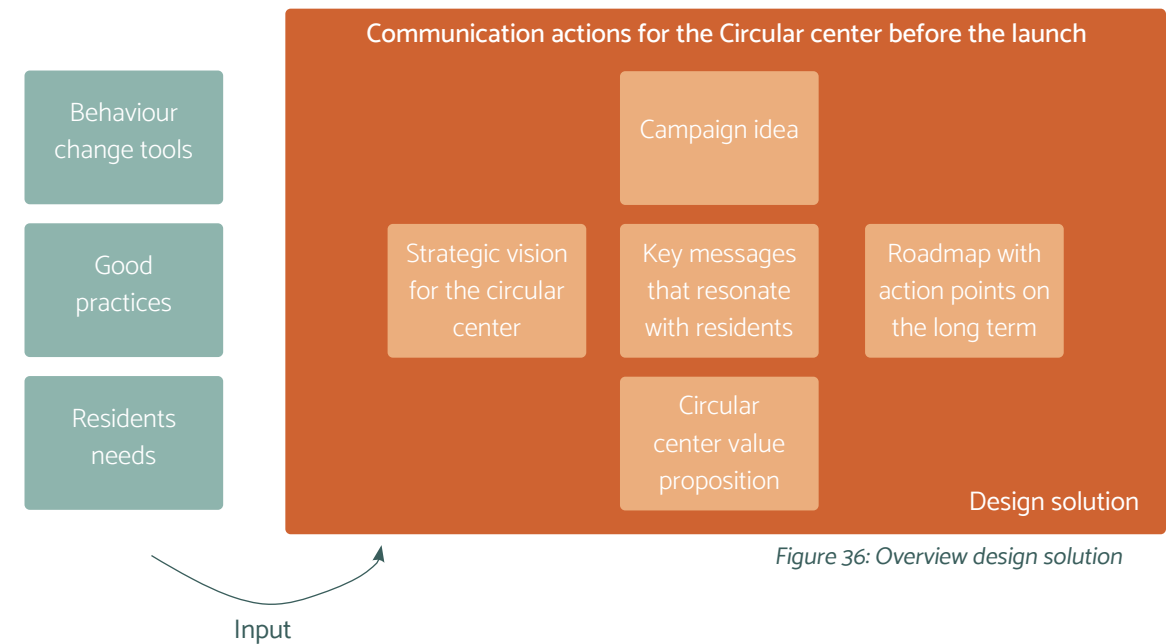

Figure 36: Overview design solution

THE ELEMENTS THAT CAN MAKE UP THE DESIGN SOLUTION

The focus of the design solution (figure 35) started with branding. The initial design solution focused on developing a value proposition for the circular center first because the need for tangibility on the meaning and social aspect appeared to be most urgent. However, the value proposition is just one step in the development of the circular center. To create a more meaningful design solution, the focus shifted towards: which communication actions can support the development of the circular center before the launch? This is to prepare residents for the circular center and get them involved from the beginning, not when the circular center is just opened.

Strategic vision
In order to give the BUCH and residents an idea of how the circular center can evolve and how communication can contribute to this, a strategic vision is made. It gives the BUCH a clear and easy to understand target that provides direction (Simonse, 2017). That strategic vision forms the overview for which the other actions are supporting elements.

Campaign idea
To create awareness of the development of the circular center and what it could mean, ideas for a campaign are explored. The resident's needs, good practices and behaviour change tools are used as inspiration. The good practices in chapter 3 show that campaigns are widely used as a tool to increase visibility and awareness among residents as a first step in changing their behaviour. The ideas are created from the 'colour locale' perspective, aiming to create a regional connection that could also be applied to the local context.

Strategic roadmap
In order to clearly see how these supporting actions relate to the vision, a roadmap is made. A roadmap is a strategic plan that defines a goal and includes the major steps or milestones needed to be reached (SIMONSE, 2017). The roadmap represents the strategic vision with more specific actions the BUCH can take before and after the launch of the circular center. This strategic roadmap is meant to communicate the strategy for the coming 8 years. It is about having something tangible to start working with to ensure commitment to good communication to residents and as a result more interest in the CC. In this manner it doesn't stay a 'free-floating' idea anymore (SIMONSE, 2017)

Iteration on idea direction: colour locale more present

A meeting with Marguerite and Esther on the chosen idea direction revealed the following new insight. These have influence on the viability of the idea direction and are crucial to take into account. Discussing the solution direction of branding, a communication strategy showed to be an interesting direction because of the following reasons.

• **The BUCH could never be mentioned in relation to the circular center** Apparently, they do not come forward as a united front that is developing the ciruclar center. Why would they not take this chance and use the circular center as a way to get more credibility on what the buch municipalities can do together. It feels logical that the residents are confused about the efficiency of the buch if it is never communicated to them as one organisation. It feels logical that residents are more connected on a local level as there is not a regional identity or feeling. For example nowadays everything is communicated to them with the three logos separately. Therefore in creating a communication strategy that is viable, this issue has to be taken into account. That has the following impact on branding:

This gives an extra challenge: **How can we brand if it can not be branded with BUCH but rather at the municipal level? How can you make people feel involved with the common goal of circular center but also show couleur locale?** This is very crucial to develop as residents need to be more involved with the circular center and repair and reuse activities.

Impact of 'colour locale' on branding
No branding from BUCH workorganisation but at municipal level for political reasons.

Table 5: Impact colour locale

Implications on the design solution

While continuing to work on a value proposition for the circular center as part of a communication strategy, again a new insight emerged. If a value proposition would be made, who will be responsible for this? Who can use this information and put it to practice? This refers to creating an opportunity for behaviour change by looking at ways to facilitate communication. If clear communication is needed by residents and the BUCH has no ability to develop this, residents cannot be reached and involved in the development of the circular center. Moreover if there is no facilitation from the BUCH in providing platforms, it would be difficult to show the social norm and give residents a sense of self- efficacy. **That resulted in a gradually shifting focus from only creating a value proposition for the BUCH to creating value for a communication advisor.** It seemed valuable for the future communication advisors who are going to work for circular center as a tool on how to communicate in collaboration with residents with regard to HUB circular center. This manner a clear direction can be given to residents.

A communication advisor has plays an important role in setting up communication strategies for the BUCH and pays attention to different channels he/she can use to express the strategy. The Communication Advisor takes care of both the internal and external communication of the organisation (Beroepengids, 2022).**This would give the opportunity to develop a communication strategy that can be implemented internally but put to practice externally in collaboration with the residents.** This manner the input and values of the residents can be translated into a communication strategy that puts residents first. It can help to stress the importance of involving residents from the start and this manner focus on the participation that is highly spoken about in the official documents of the BUCH. The findings I made can contribute to a communication advisor's work as they guide them through what is important for residents and which ingredients should be taken into account when communicating about the circular center and repair and reuse practices. The concept will from now on focus on what a communication advisor needs from support, as presented in figure 37 on the right.

As a result the communication advisor is an additional stakeholder to include in the list of requirements in chapter 4 (Ch 4.3).:

- The solution should be a guide that the communication advisor can work on immediately (clear language and structure)
- The guide should not be written or presented in a delegating tone that hinders the adoption
- The guide should stimulate action (making it visually appealing and stressing the importance of the communication advisor that can help in involving residents)
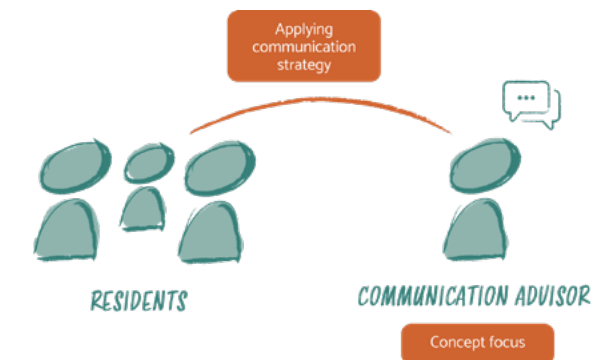
Figure 37: Shift to communication advisor

Reflection 3: Before reading further an elaboration needs to be made on the design process.. The design solution that focused on the communication advisor is evaluated in chapter 8. From the evaluation several improvements were suggested and integrated in the solution. To avoid repetition in showing the guide for the communication advisor wherafter showing the iterations, the final elements are shown in the following sections. This manner the reader can understand what the final solution is rather than being lost in all the iterations made. These iteration can thus be found in chapter 8.

Working with challenges in the BUCH context

In this report the 'colour locale' is mentioned several times as an interesting aspect that affects the development of a communication strategy. After several conversations with the company mentor and the collaborating mentor the following elements were discovered. These elements are taken into account in creating the strategic vision. These two elements form the main challenge in involving residents in the communication.

1. COLOUR LOCALE VS THE BUCH

- The tension between what the BUCH as a working organisation can be and what the municipalities want is clearly visible. The BUCH can accomplish great things if the municipalities want to work together and view themselves as a part of the BUCH. That is also a reason why the BUCH was set up, to join forces and tackle complex challenges together. However the municipalities each express a strong desire to communicate on a local level because when communicating from the BUCH, they fear losing their own identity and character as a municipality. The BUCH is not seen as one of the most important factors to tackle challenges, ambitions on a regional level (van Veller et al., 2020).

The opportunity here lies in embracing the character of each municipality as part of the regional circular center. Each municipality has something to contribute.

- Another reason for not using the BUCH as communication means is because the residents do not know about it. This came up in an interview with Esther Keijser. That is a striking answer because it implies that there is no effort going on in making the BUCH a strong workorganisation. It results in a vicious circle of residents not knowing about it and being confused on the added value of the BUCH and the BUCH themselves not using it as a strong communication standpoint because residents do not know about it. Researching the municipality's environmental vision, 70% of the political agenda on sustainability is equal (see appendix fixme).

The opportunity here lies in subtly implementing the word BUCH somewhere in communication materials to show their involvement and commitment to the cause.

2. COLOUR LOCALE VS THE CIRCULAR CENTER

- The previously named tensions influence communication on a regional level, the circular center. Communication to residents cannot be branded from the HUB, but rather on the local, municipality level.
- Not only does the municipalities desire more local communication rather than regional, the residents do so to. In my interviews they emphasised the importance of starting a local network first because people are not ready yet for something like a circular center. Therefore residents need to be prepared locally for what can be done regionally in the circular center. An extra evaluation with residents is necessary to determine a broader perspective of residents related to local or regional identity for the circular center

The opportunity here lies in seeing the circular center as a place where local talent comes together on a regional level. The colour locale can be brought together in the circular center to showcase what each municipality contributes

5.2 Developing the communication approach

Aim

To be able to make residents aware of how they can contribute to repair and reuse activities, cooperation is needed from the different municipalities to create an opportunity for residents to do so. This involves not only creating awareness for residents but also municipalities. This manner participation can be put to practice and does not remain a sleeping thing:

'The citizen participation policy seems to be however, to lead a dormant existence, because the principles and frameworks of that policy in practice do not or are hardly actively and consciously applied in the participation processes (van Veller et al., 2020).'

GOAL
Providing support for the key stakeholders of the climate programme of the BUCH. The goal is to give them a unifying direction with actionable steps to take to collaborate with residents on these steps. This would bring them on the same page when expressing communication of the circular center (regional level) to a local level.

FOR WHO
The key stakeholders of the climate programme of the BUCH. these refer to the key players involved in communicating about the circular center to residents. Examples are area directors, collaborating partner, communication advisor and the communication team, members of the city council, councillors.

WHAT IS STRIVED FOR
The circular center can be a tool to inspire the key stakeholders to develop a joint vision in collaboration with residents. Thsi to facilitate communication activities, messages and services that resonate with residents. It is about thinking big but translating it locally, which is stated in the evaluation report on the BUCH: *'As a BUCH, the organisation must think big (also to achieve quality and cost benefits), but translate its services to the small scale of the four municipalities.' (van Veller et al., 2020)*

To become the best service provider, harmonization is preferable in order to make the most of the quality of the organisation. This harmony can be better realized if the municipalities are also on the same page in terms of content. in addition, with one story and message towards the region, more proactive and powerful action can be taken.

Communication activities for the roadmap

These activities represent proposed actions that the key stakeholders can implement to involve residents and prepare them for the opening of the circular center. These elements are chosen based on relevance to the challenges related to the social norm and tangibility of repair and reuse practices and the circular center.

VALUE PROPOSITION CIRCULAR CENTER

Challenge 2: not associating the circular center with a social meeting place. Therefore it would be a good opportunity to create an identity for the circular center where residents can relate to. Normally these branding elements are created simultaniously with the product, in this case the circular center (Waddell, 2019). Internally there were frustrations when setting up a news message on the circular center, as there was no consistency in the identity for the CC. For these reasons the value proposition is included in the strategy as it is one of the first steps that would be valuable to implement.

APPROACH

To come up with a value proposition, the context of the HUB, residents and the BUCH is reviewed. By doing this, the position and character of the circular center could be identified. This step is also necessary in determining the key message for the CC. It gives a clear position on the circular center towards communication to residents.

THE BXP EXERCISE

Brainstorming on the value proposition is done by using the BxP vlaue proposition map, brand DNA and the whywhathow exercise. These two methods force the designer to think about the personality and character of the brand to be able to develop a core message that can be implemented consistently.
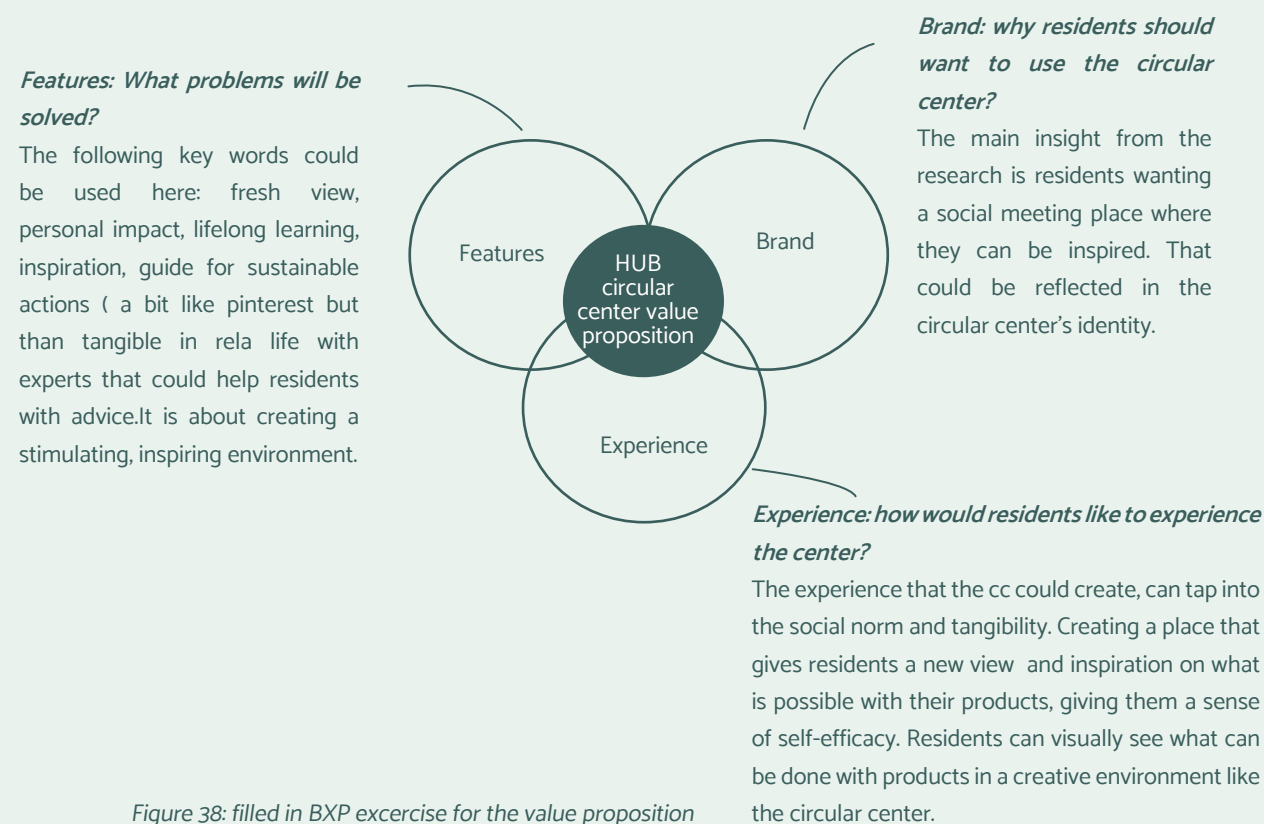
THE WHW EXERCISE

To grasp the main reasons of existence for the circular center, the why how what excerscise is used. The main aim of a circular center is supporting not only residents but also municipalities in stimulating to reuse and repair products to transition into a circular HUB environment where everyone can have its own contribution, no matter how small.

Why: The vision, the goal and what is believed in. The reason why the circular center actually exists	Supporting and encouraging municipalities and residents to reuse and repair products in order to promote the transition to a circular economy so that everyone can contribute and understand this.		
How: What makes it special	Connecting people and elements. Connections that move are central	Creating a meeting place and experience center	By taking the strength and knowledge of the residents with them
What: What kind of services/products are offered?	Show space for residents' products	Workshops	Meeting place where you can have a coffee / Central place for information reuse and repair

Figure 39: The WHW exercise

BRAND DNA

By using the WHW and BxP exercise, it gives the opportunity to fill in the brand dna that defines the circular center as a brand.

Features: What problems will be solved?
The following key words could be used here: fresh view, personal impact, lifelong learning, inspiration, guide for sustainable actions (a bit like pinterest but than tangible in rela life with experts that could help residents with advice.It is about creating a stimulating, inspiring environment.

Brand: why residents should want to use the circular center?
The main insight from the research is residents wanting a social meeting place where they can be inspired. That could be reflected in the circular center's identity.

Experience: how would residents like to experience the center?
The experience that the cc could create, can tap into the social norm and tangibility. Creating a place that gives residents a new view and inspiration on what is possible with their products, giving them a sense of self-efficacy. Residents can visually see what can be done with products in a creative environment like the circular center.

Figure 38: filled in BXP excercise for the value proposition

Features
levenslang leren, kracht van bewoner meenemen en zorgen voor een betere toekomst

Mogelijke call to action: want deelnemen hoeft niet moeilijk te zijn of want verhalen inspireren

Positioning statement
For residents of Bergen, Uitgeest and Heiloo who want to learn, share knowledge or simply lose their belongings, the circular center offers an experience center and network for reuse and repair that makes inspiration and beautiful examples visible in a way that makes it easier for people to participate in a better, sustainable buch environment and a circular economy.

Positionering
Voor bewoners van Heiloo uitgeest en bergen die circulaire enthousiastelingen, hobbyisten, potentiele bijdragers kunnen zijn, geeft het circulair centrum hen een plek waar verbinden centraal staat. Verbinden betekent samenkomen, leren en verhalen/voorbeelden delen

Het doel
Want een circulaire economie draait om meer dan alleen producten, het gaat om verbindingen tussen mensen

Persoonlijkheid
Nieuwsgierig
Open
Ondersteunend
Toegankelijk

Figure 40: Filling in brand DNA as an example of what the circular center could mean

STRATEGIC VISION

To show what communciation can contribute for the circular center a strategic vision is created for the HUB circular center. The vision is intended to inspire and motivate where the circular center should go in an ideal world. It represents the combination of residents needs and what the added value of a circular center can be. That is focus less on technical aspects of reuse and repair and more on the social added value of having a place where everyone can contribute something and help each other. The vision builds upon the envisoned symbiotic relationship, defined in chapter 4 and takes into account the opportunities defined in chapter 3 (Ch 3.2). The visions of the municipalities themselves are also reviewed to find their common ground (see appendix D2.1, D2.2)). This to create a vision that appeals to the three municipalities involved and strengthen what they have in common.

ITERATION ON VISION: ASKING RESIDENTS

There are new elements to include as well that emerged after conversations with Marguerite, Esther and residents. To solve the ambiguities about communication with residents, a meeting is planned with Esther and Marguerite to focus on what is still missing. Two interview questions were sent to residents about the vision to figure out if they could identify themselves with it, what communication channels they prefer and how would they like to be communicated. That resulted in the following adaptation to the initial vision in chapter 4 or suggestions that could be added to the communication roadmap.

• The BUCH has an influence on the circular center so they should be included in the vision. but as a coordinating role because the aim is to create a center that is self-sustained.
• The municipalities should be include as well because the colour locale is strongly present
•The buch cannot be communicated as such because residents do not know it. The intention is that communication is not from buch but rather from a regional entity that revolves around circularity and can be translated locally. This conversation gives me a new insight to start looking at creating a regional identity that revolves around circularity. This manner the BUCH is not directly communicated (Relating to the tangibility factor)
• Starting with local stimulation shared among residents:

'I Every week a message in the Uitgeester at the municipality page and keep repeating this'
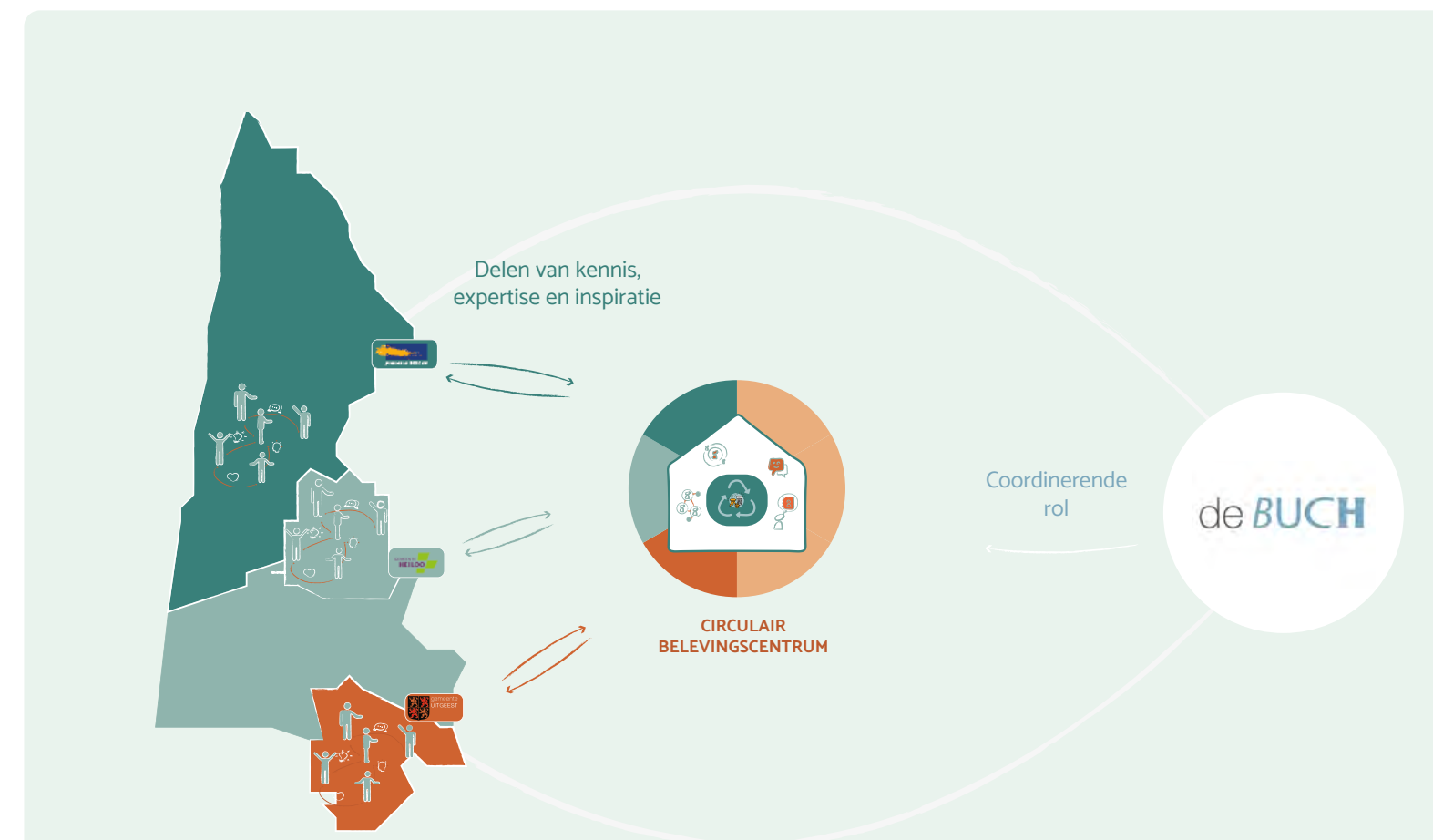
Resident Uitgeest

'I think that a local initiative has a better chance of success than a joint center in Castricum, for example. Uitgeesters know each other and like to do something together. Castricummers are a different people, and we don't know the inhabitants of Heiloo and Bergen at all. '
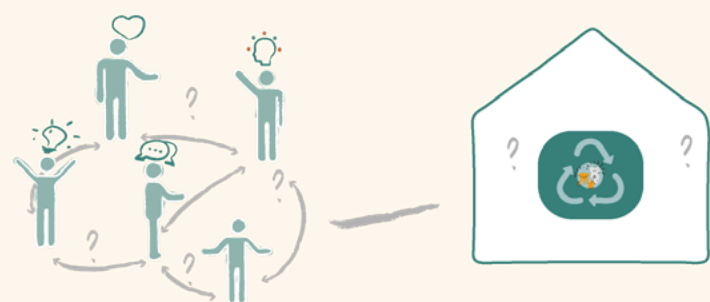
Resident Uitgeest

VISION 2030

By 2030, the Netherlands will have to use 50% fewer primary raw materials (minerals, metals and fossil fuels). To get here, circular thinking must become the new norm. The circular center can contribute to this as a tool for residents to buy more consciously and to deal with products. In 2030, the circular center will be an experience center. There is a symbiotic relationship between residents themselves and the center where circular thinking has become the norm because people feel connected to each other on a regional and local level. They inspire and learn from each other at the local and regional level so that stories and good examples can thrive in the community. This manner residents feel they can contribute to a circular economy. The steps required for this are shown in the strategic vision on the next page. It is about **Connecting people at local and regional level so that they can learn and inspire from each other and make those actions visible with the aim to make circular thinking the new norm**

In this vision, the colour locale as mentioned in the challenges is taken into account. The municipalities can retain their own identity by offering local activities that can be scaled to the circular center, displaying the local achievements. This can be done, for example, by showcasing products from our own residents and showing what talents are available in the various municipalities. This can come together in the circular center. The Buch plays a rather coordinating role in this, supervising the circular center and ensuring that the right people come together to steer the center in the right direction.

Figure 41: The desired vision in 2030, as part of the strategic roadmap

2023
FOCUS OP LOKALE IMPACT

2025
RICHTING VERBINDING CENTRUM EN ELKAAR

2030
EEN CIRCULAIR ECOSYSTEEM

KENNISE, PASSIE, EXPERTISE EN INSPIRATIE OVERDRAGEN

Delen van kennis, expertise en inspiratie

Coordinerende rol

de BUCH

CIRCULAIR BELEVINGSCENTRUM

Making **visible** what active residents and circular entrepreneurs are doing about reuse and repair and making connections between them so that they can help each other.

Connecting the residents with the social function of the circular centre so that it becomes something tangible.

Connection with the circular centre at **regional level** by connecting the local activities with the centre. This by showing at regional level what residents contribute at the local level of circular activities. The circular centre will be a meeting place where everyone from every municipality can contribute something: young and old, entrepreneur. not entrepreneur, active resident, everyone contributes something.

Symbiotic relationship between residents and the center where circular thinking has become the norm as people inspire and learn from each other at the local and buch level so that stories and good examples can thrive in the community and residents feel they can contribute to a circular economy.

What communication can contribute

1. This by communicating the same core message at local and regional level.

2. By filling in residents in part of the communication activities: What do they want to contribute and make visible? This also shows how residents have been involved in communication.

What communication can contribute

1. Communicating that the BUCH is part of the development of a circular centre and contributes to this. This is to develop more awareness of BUCH at regional level.
2. Let's see what you achieve by working together.
3. Let residents contribute to a regional campaign that can be communicated at a local level.

What communication can contribute

1. Continue to communicate key messages and be consistent in this so that residents can continue to be stimulated to contribute to circular initiatives

Figure 42: The strategic vision for the circular center

2023: focus on local impact

The focus on local impact as a first step is necessary to create responsibility on a local level. First residents need to understand how they can contribute on a local level before asking commitments on a regional level. Having the first interventions on a local level, helps to make the issue more local and proximal instead of global (relates to tangibility tool from the shift framework). In order to inspire and motivate people to do more reuse and repair, there is a need to make the **right connections** between people who can help each other and present inspiring examples and situations to people and **make these actions VISIBLE.** As a result, people know that reuse and repair actually occurs more often than they think and they will therefore be able to better estimate how individuals can contribute to a circular economy. This phase is about showing people that there are many possibilities to reuse and repair things and that not everything has to end up at the cycle and ultimately environmental street. If someone's coffee machine is broken, and this person knows that there is someone in her neighbourhoodwho likes to deal with this, then that is already a contribution to a circular transition because the product stays in the 'loop' longer.

2025: towards connection with the circular center and each other

In 2025 the aim is to create connection with the circular center on a regional level and with residents among each other. It is also the year in which 30kg of residual waste (of which 5 kg bulky waste) per resident per year is the goal. To achieve this, residents are stimulated and acknowledge which role they can have in the transition to a circular economy. They know the purpose of the circular center and can each make their contribution.

2030: towards a circular norm

This milestone is choosen because the dutch government has set the goal that by 2030, the Netherlands will have to use 50% fewer primary raw materials (minerals, metals and fossil fuels). This phase consistutes the combination of phase 1 and 2, having a symbiotic relationship. It is suggested that this will not be possible without making local impact first to be able to create a regional connection afterwards.

Different particpation levels over different phases of the strategic vision

To assess projects and initiatives on their participation level, the BUCH uses the participation triangle. According to Meijer & Straathof (2020), the role of residents can be integrated in the participation triangle. The highest level is self-governance, where residents, local entrepreneurs plan, initiate and govern projects or initiatives themselves. The higher you go, the higher the level of participation. Also the higher you go, less people are involved. Currently residents are informed, recorded and consulted. However to achieve more involvement with residents in the BUCH the activities need to go higher on the pyramid. Therefore in the strategic vision it is proposed that incremental steps of participation along the ladder is implemented.
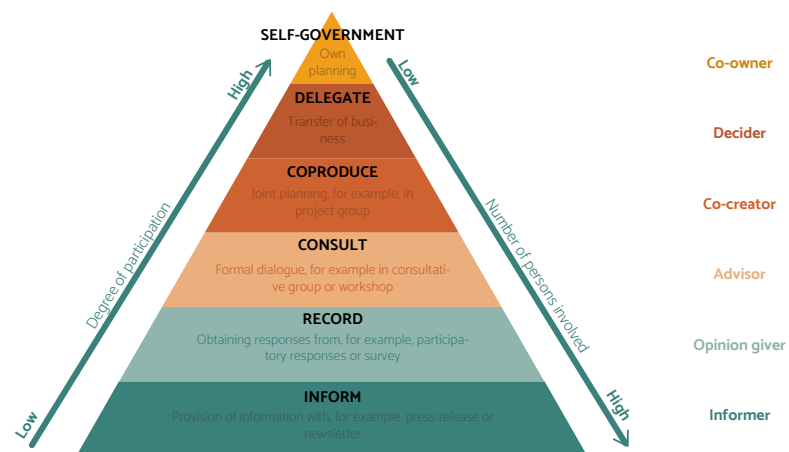

Figure 43 : Participation triangle as evaluation tool in BUCH municipalities (Kelders et al., 2018)

DEVELOPING THE ROADMAP

Bringing elements and activities together on a roadmap that clearly shows the milestones and the sub-steps needed for this in view of the various tensions that influence the development of a circular center. It Shows how vision can be achieved through communication and other elements that need to be taken into account. The activities described below are suggested elements for a communication approach. By utilizing these elements, a succesful communication strategy can be created. The process that results in the strategy is equally, even more important than the plan itself (WSchell, 2017).

Purpose of the roadmap

The specific purpose that the roadmap supports is creating an offline community where circular thinking is the new norm.
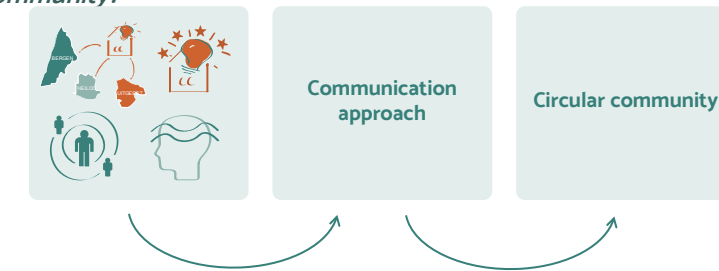
A circular community?

Figure 44: Aim of the communication approach

To create a community that is self-sustained, several key conditions were found by reviewing the good practices (Ch 2.4), resident involvement (Ch 2.3) and searching online for community development (Padhy, 2020). A community is about creating space for people to connect and share.

· **Ambassadors are key:** they form the anchor of the community, driving conversations and make newcomers feel welcome. Making residents ambassadors too is crucial to make them feel heard and involved in the development of the circular center. These ambassadors can motivate non-active residents because it seems more accessible to them if an simarly person does the desired behaviour instead of circular entrepreneurs for example. Making residents ambassadors also creates more local impact because it can feel closer to residents.

· **Online platforms** to connect residents are easy accessible. Currently in the HUB there is noo participation platform in place where residents can share ideas.

· **Supporting a social cause** : for the HUB CC residents needs relate to this condition because they are motivated to come to the CC if there is a social purpose behind it. Residents like to help each other.

· **Events:** Offline events are equally important as they provide a space where residents can directly interact with each other.

· **A rewarding feeling:** rewards could be tangible, boosting residents feeling of pride but also intangbile, related to the rewarding feeling they might get when helping others.

Figure 45: Four groups of target audiences, resulting from the findings of the research

Ondernemers die willen maar niet kunnen

Collectief niveau

Willen deelnemen maar geen ondersteuning van gemeente

Impact creeren

Locale ondernemers

Voelen zich hulpeloos

Op zoek naar andere manieren voor samen-werking

Anderen betrekken en stimuleren

We kunnen samen een verschil maken

Samenhorigheid

Verhalen en passie delen

Afval als een kans om waarde te creeeren

Drempel

Onkunde

Intentie maar nog geen actie

Gemotiveerd om actie te ondernemen

Anderen stimuleren

Onverantwoordelijk

Gepassioneerd

Doelgericht

Bewoners die niet weten hoe bij te dragen

Actieve bewoners

Individueel niveau

The target audience

Four target audience are defined to focus creating key messages on. This because there are different gradations in how involved residents currently are and they need to be approached differently. In the strategic vision, to create a circular community in which everyone knows how they can contribute and what opportunities there are in waste. That shows the quadrant at the top right. These are mainly entrepreneurs who are collectively strong in stimulating others with their business to make an impact. On the other hand, you also have entrepreneurs who collectively want to make a difference but with no support from the municipality, they no longer try to continue this with the municipality but try other possibilities that they can maintain themselves. At the bottom, along the left side, you mainly have residents who recognize that there is a problem but who have no idea how they can contribute to it, especially through ignorance. On the right you have active residents who are committed to a better living environment, have a goal to stimulate others in this and are passionate about what they do. Unfortunately, these people do not immediately have a platform to make more impact on a collective level. **Therefore, we strive to bring the other three to the quadrant right above.**

Tackling the barriers with the shift framework to find the right message

It is important to remember that no single consumer behaviour change tool works "best." Rather, the most effective strategy is to consider the specific consumer behaviour you wish to change, the barriers (and benefits) associated with the behaviour and the intended target of any behaviour change strategy (White & Habib, 2018). The most important behaviour change tools, as concluded in phase 1, could be used as a backbone for the roadmap (figure 44). They form the base for key messages for the different target groups. A message pyramid is made to define the most important messages (see appendix E.1). The four main tools are presented on the right and showed how they relate to the messages. By using this as an overview, activities for the roadmap can filled in more easily. The municipalities are also included in this because, since the 'colour locale', they are an important target group to take into account in order to set up a working communication strategy. These behaviour change tools can be used as input for the communication advisor. With these tools, the key stakeholders can create key messages that resonate with residents and can be send jointly to all the municipalities.

Doelgroep	Algemeen	Gemeenten	Actieve bewoners	lokale ondernemers	Bewoners die niet weten hoe ze moeten bijdragen
Drempel	Nog geen sociale associatie met het CC	Angst om identiteit te verliezen wanneer gecommuniceerd vanuit BUCH	Geen stimulatie van lokaal netwerk om anderen te stimuleren	Geen platform om inspirerende voorbeelden en kennis te delen	Onkunde, niet weten wat mogelijk is
Message	Het circulair centrum is meer dan alleen een plek voor hergebruik en reparatie, het is ook een belevingscentrum	Samen streven naar een circulaire economie rekening houdend met colour locale kan door rijkheid gemeenten te omarmen!	Tonen dat mensen ook kunnen bijdragen en het goede voorbeeld tonen niet alleen circulaire ondernemingen	Laat zien wat je doet en inspireer bewoners want alleen samen kunnen we voor een betere toekomst zorgen	Bijdragen aan CE hoeft niet veel moeite te kosten, zelfs jouw schijnbare acties maken al een verschil. Wij tonen hoe!
Gedragstool			Social norm		
				Self-efficacy	
		Tangibility			
		Fostering good habits			

Social norm	Toon dat anderen engageren in het gewenste gedrag in publieke settings (sociaal bewijs). Dit kan ervoor zorgen dat het gedrag meer sociaal gewenst is en daardoor meer kans dat het aangenomen wordt. Dit door het gebruik van descriptieve normen: weten dat andere mensen deelnemen aan activiteiten.
Self-efficacy	Toon de toegevoegde waarde/ impact als het gewenst gedrag wordt uitgevoerd.
Tangibility	Toon locale impact door de duurzame acties meer lokaal te benadruk-ken in plaats van een globale benadrukking dat te ver weg lijkt
Fostering good habits	Maak het duurzame gedrag minder belastend of makkelijk doenbaar. Toenemende kans dat het een gewoonte wordt die consumenten bereid zijn over te nemen en te behouden

Figure 46: Applying behaviour change tools to possible key messages for communicaiton materials in the HUB

Campaign idea

In order to develop a campaign, a visual identity should be created that can be used for offline and online communication materials. By doing this, residents can become more aware of the identity and what it can mean for them. In creating these campaign ideas, attention was paid in finding a balance between showing local enagagement and creating a regional feeling as well (relating to the colour locale).

Regional involvement with campaign identity:
During conversations with the project manager of the HUB CC, the insight emerged that a regional identity is desired that does not directly relate to the BUCH itself. Therefore in the campaign the focus will not be on BUCH as a workorganisation, but a **regional identity** that can be used for the circular center and activities. Still attention is paid to subtly use the BUCH in the identity so that residents can see that the BCUH is working on meaningful projects. This manner they might relate more to the BUCH since they come accross the name more often. An example is shown in the figure below. The slogan is deliberately written more broadly because it gives flexibility. For instance, it would give more opportunities for the BUCH if they want to integrate the regional identiy for other pillars related to climate ambitions.

Figure 47: Idea for regional identity

Local engagement: movement: de doeners
In the strategic vision, local stimulation is a first step in achieving awareness. The aim is to connect residents locally, taking into account the power of the residents themselves (self-efficacy). To provide support for this, the BUCH can develop a local movement that can be implemented in the three different municipalities. The idea is that residents can share their knowledge and products locally so that the products can be reused or repair by local residetns. Afterwards they could show what they made with the product someone delivered to them. This can created a rewarding feeling. The movement can be part of the regional campaign described above.

Figure 48: Idea for local campaign

DELIVER

In this section the last phase of the double diamon is adressed. It presents the guide and final roadmap. It tries to understand if the guide and elements in there would actually be used and implemented for the circular center. the guide is used as a way to assess. These insights were used to describe the final recommendations for future steps. Finally, this phase ends with a discussion, and a conclusion.

06: THE GUIDE

In this chapter the final design solution is explained and elaborated on.
The final guide is attached as a separate document.

6.1 Introducing the guide for key stakeholders

In this chapter, the final design of the communication approach is explained. That communication approach was initially is directed for the communication advisors within the BUCH. However after some interviews and validation on the idea and workformat in the context of the buch, it was decided to update the guide. That included directing it to key stakeholders within the climate programme. To be able to create a tangible deliverable they can use, a guide is made. This document is attached seperately with this thesis.

What is it?
The final design is an approach for key stakeholders within climate policy in preparation for the circular centre and shows action points they can take during the development of the circular center

For who?
This thesis focusses on the circular center but it is much more broader then that. The guide is something that multiple stakeholders with regard to the five pillars of the climate programme of the BUCH. These stakeholders include area directors, communication advisors, the communication team, participants of the city council, policy officer of the circular center and other projects

What does it do?
The guide gives an approach of communication in collaboration with residents to the key stakeholders of the climate programme. They can use is as a support and reference to discuss and implement activities in preparation of the circular center. The guide gives examples and tips on which activities could fit the target groups and what messages could resonate with them. Examples of such activities are illustrated how they can be communicated. Also with each activity there is a reference to how residents can be involved. The guide aims to create a symbiotic relationship between residents among themselves and the BUCH. The BUCH plays a crucial role infacilitating the activities where residents are part of and can contribute to. Residents on the other hand could be more involved because now they have the ability to participate.

How does it work?
That booklet represents the major elements described in this chapter to focus on as key stakeholders. Together they form an approach for the them to work on in the context of the HUB. This document is attached seperately with this thesis. The main outcome of this project is thus a guide for the key stakeholders of the climate programme. All the elements in the guide are contribute to each other, aiming to create a unifying vision in collaboration with residents for the circular center.
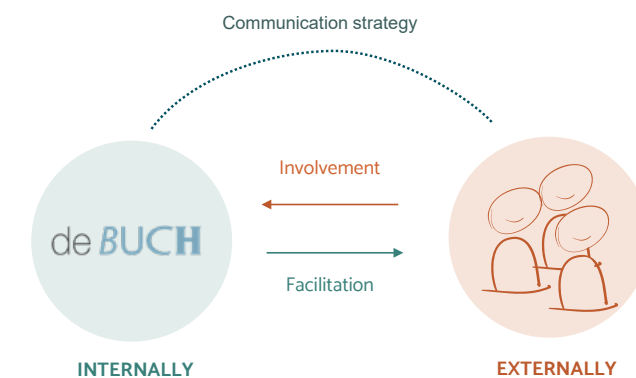

Figure 49: The aim of the guide and approach

6.2 The four ingredients in the guide

The communication Advisor

To present the comunication advisor with a guidance to work with, several ingredients for a working strategy are defined. The ingredients presented below should give the advisor a good frame to work with in the BUCH context. It gives him/her the ability to convince the political entities that might block certain action to do different. Normally he/she when working with goverment entities, focuses on informing whereas in commercial context this is convincing (Beroepengids, 2022). However for this scope convincing is also applicable because the political entities are not sufficiently aware of the importance of communication to invove residents in the development of the circular center. Therefore elements in the guide can also be used as a conversation tool to convince the city council and board.

The ingredients

The first ingredient is adressing the importance of communication to get residents involved in a circular economy. The second are the challenges that exists in the BUCH that needs to be taken into account. These can influence how certain message need to be adressed and tackled. Third, a strategic vision is made to show what the circular center could be in 2030 and what the largest steps are in achieving that vision. Having a clear vision and a degree of flexibility built into project plans, were most successfull (Simonse, 2017). It gives the end-user a clear and well-articulated, easy to understand target that provides direction to everyone in the organisation. The last ingredient is the roadmap for the adivsor to guide them through the steps described in the strategic vision.
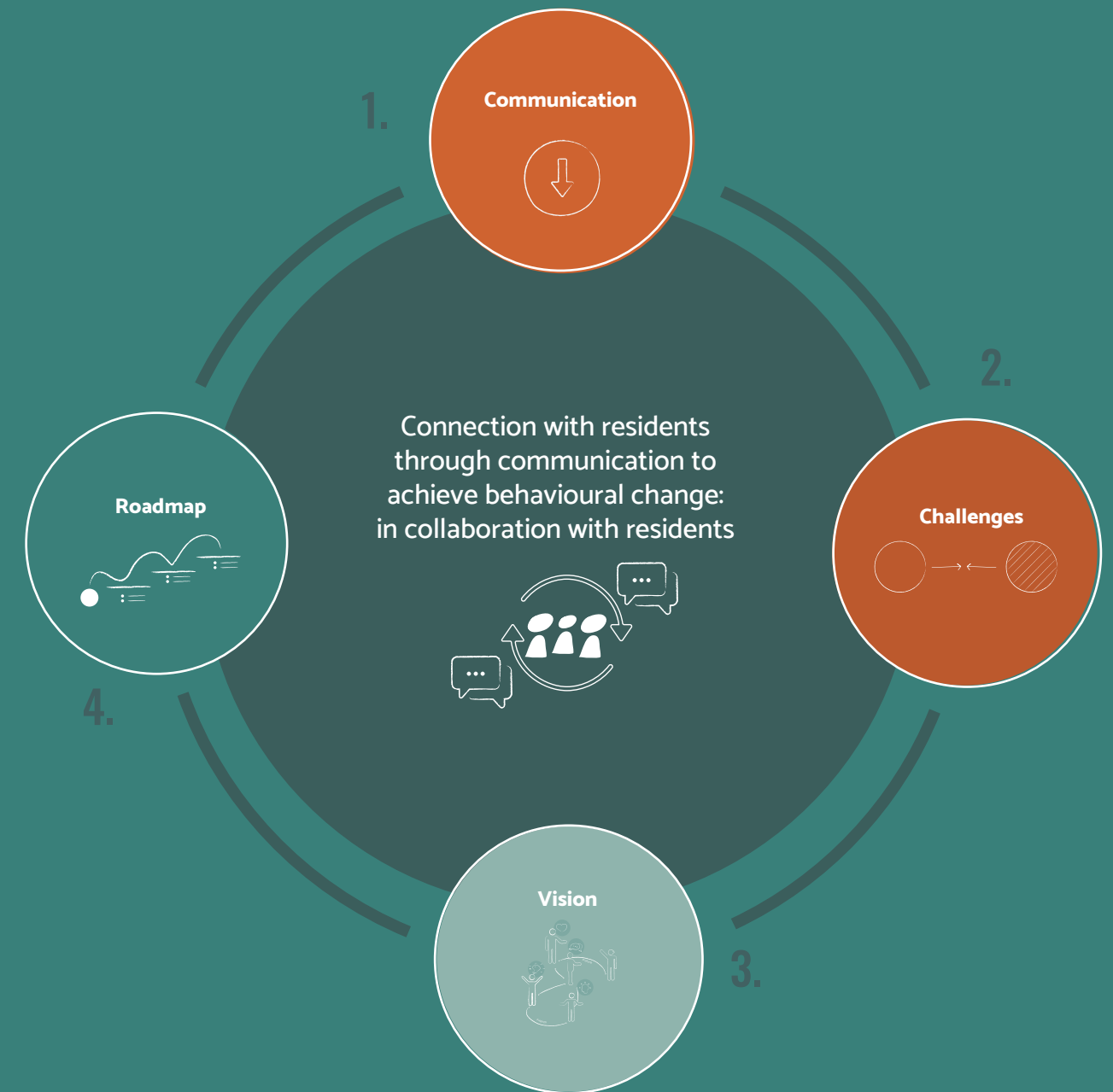

Figure 50: The ingredients of the guide that make up the approach

Figure 51: Mock-up of the final guide

07: THE ROADMAP

In this chapter, the roadmap is explained and how to read it. Each horizon is explained separately to understand each part and its relation to the strategic vision.

Introduction

The roadmap is the largest part and fourth ingredient of the guide for the communication advisor. The ingredients mentioned in chapter 5 come together in this part where the focus is on how to implement these and how that could be done.

7.1 Introduction to the roadmap

This strategic roadmap is meant to communicate the strategy for the coming 8 years. The aim is to create decision making support for communication experts (targeted for programme management)that will be part of the circular center. They can use this roadmap as a tool for discussion on future actions concerning the communication activities for residents in relation to the circular center. It is about having something tangible to start working with to ensure commitment to good communication to residents and as a result more interest in the CC. this manner it doesn't stay a 'free-floating' idea anymore (SIMONSE, 2017). Through a three-horizon process, the BUCH is guided towards the vision in which the circular center enables residents from Bergen, Uitgeest and Heiloo to become more responsible and knowledgeable of the possibilities that repair and reuse practices offer, and by connecting the residents locally and on a buch level, knowledge and inspiration can be transferred.

The vision

The vision presented in the roadmap consist of three different milestones to be achieved. These relate to the strategic vision presented in chapter 5 (Ch 5.2.3).
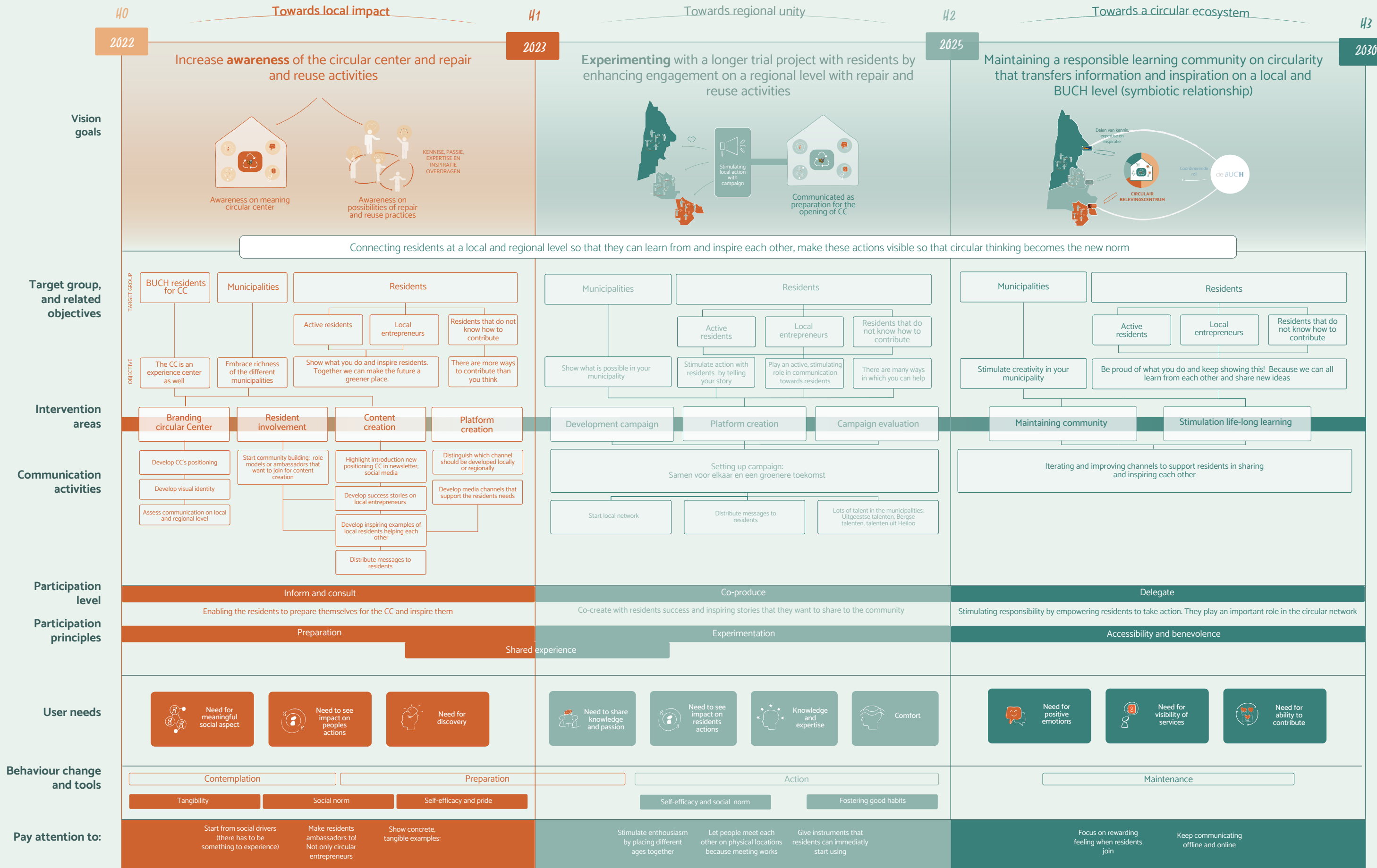
H0 2022 — **Towards local impact** — **H1** 2023 — **Towards regional unity** — **H2** 2025 — **Towards a circular ecosystem** — **H3** 2030

Vision goals

Increase awareness of the circular center and repair and reuse activities

KENNISE, PASSIE, EXPERTISE EN INSPIRATIE OVERDRAGEN

Awareness on meaning circular center

Awareness on possibilities of repair and reuse practices

Experimenting with a longer trial project with residents by enhancing engagement on a regional level with repair and reuse activities

Stimulating local action with campaign

Communicated as preparation for the opening of CC

Maintaining a responsible learning community on circularity that transfers information and inspiration on a local and BUCH level (symbiotic relationship)

Delen van kennis, expertise en inspiratie

Coördinerende rol

CIRCULAIR BELEVINGSCENTRUM — de BUCH

Connecting residents at a local and regional level so that they can learn from and inspire each other, make these actions visible so that circular thinking becomes the new norm

Target group, and related objectives

TARGET GROUP

BUCH residents for CC | Municipalities | Residents
- Active residents | Local entrepreneurs | Residents that do not know how to contribute

Municipalities | Residents
- Active residents | Local entrepreneurs | Residents that do not know how to contribute

Municipalities | Residents
- Active residents | Local entrepreneurs | Residents that do not know how to contribute

OBJECTIVE

The CC is an experience center as well | Embrace richness of the different municipalities | Show what you do and inspire residents. Together we can make the future a greener place. | There are more ways to contribute than you think

Show what is possible in your municipality | Stimulate action with residents by telling your story | Play an active, stimulating role in communication towards residents | There are many ways in which you can help

Stimulate creativity in your municipality | Be proud of what you do and keep showing this! Because we can all learn from each other and share new ideas

Intervention areas

Branding circular Center | Resident involvement | Content creation | Platform creation

Development campaign | Platform creation | Campaign evaluation

Maintaining community | Stimulation life-long learning

Communication activities

Develop CC's positioning
Develop visual identity
Assess communication on local and regional level

Start community building: role models or ambassadors that want to join for content creation

Highlight introduction new positioning CC in newsletter, social media
Develop success stories on local entrepreneurs
Develop inspiring examples of local residents helping each other
Distribute messages to residents

Distinguish which channel should be developed locally or regionally
Develop media channels that support the residents needs

Setting up campaign: Samen voor elkaar en een groenere toekomst

Start local network | Distribute messages to residents | Lots of talent in the municipalities: Uitgeestse talenten, Bergse talenten, talenten uit Heiloo

Iterating and improving channels to support residents in sharing and inspiring each other

Participation level

Inform and consult
Enabling the residents to prepare themselves for the CC and inspire them

Co-produce
Co-create with residents success and inspiring stories that they want to share to the community

Delegate
Stimulating responsibility by empowering residents to take action. They play an important role in the circular network

Participation principles

Preparation | Shared experience | Experimentation | Accessibility and benevolence

User needs

Need for meaningful social aspect | Need to see impact on peoples actions | Need for discovery

Need to share knowledge and passion | Need to see impact on residents actions | Knowledge and expertise | Comfort

Need for positive emotions | Need for visibility of services | Need for ability to contribute

Behaviour change and tools

Contemplation | Preparation | Action | Maintenance

Tangibility | Social norm | Self-efficacy and pride | Self-efficacy and social norm | Fostering good habits

Pay attention to:

Start from social drivers (there has to be something to experience) | Make residents ambassadors to! Not only circular entrepreneurs | Show concrete, tangible examples:

Stimulate enthusiasm by placing different ages together | Let people meet each other on physical locations because meeting works | Give instruments that residents can immediately start using

Focus on rewarding feeling when residents join | Keep communicating offline and online

Figure 52: The final roadmap

7.2 How to read the roadmaps: horizons

The strategic vision forms the basis for implementing communication as a means to involve residents in reuse and repair activities and the circular center. To achieve this, it is divided into four separate horizons. These represent intermediate stages, each with their own specific goals to achieve. The future vision is therefore the end point that must be achieved.

H0: Horizon 0

Displays the moment when the start of the first activities should be initiated. We can't wait any longer because the circular center should be there within two years. In order to prepare people for this, a consistent style of communication must be used from the start.

H1: Horizon 1

Displays the first milestone that aims to create more awareness. In the first year, two important steps should take place. First of all, the value proposition for the circular center must be devised so that unambiguous language can be shown. Secondly, awareness must be created about what active residents and local entrepreneurs are already doing about repair and reuse so that connections can be made between people who can help each other.

H2: Horizon 2

The second milestone is situated in the years before and after the development of the circular center, which should be in place by 2025. Here, experimentation is central through a large-scale campaign. This focuses on making the connections between people effectively visible on a regional platform. experimenting with elements from the campaign should prepare people for what they can experience in the circular center.

H3: Horizon 3

This reflects the final vision of what is being worked towards. In this phase, the main goal is to support and facilitate what is happening in the center at the regional level, and outside at the local level of activities. In order to offer the right support, it is always necessary to evaluate what the residents need and to keep in touch with this. This support gives residents the opportunity to contribute and remain active in reuse and repair.

HORIZON 1

Increasing awareness of the circular center and repair and reuse activities

HORIZON 2

Experimenting with a longer trial project with residents by enhancing engagement with repair and reuse activities

HORIZON 3

Maintaining a responsible learning community on circularity that transfers knowledge and inspiration on a local and BUCH level (symbiotic relationship)

Figure 53: The three horizons as milestones in the roadmap

7.3 Roadmap structure and elements

The roadmap develops vertically and horizontally per horizon for the different phases. Vertically, nine different layers are displayed with suggestions and activities to go through. To be able to adjust the roadmap, the help and examples below can be used.

VISION GOALS
The three horizons consist of three different milestones to be achieved. To understand what is happening in each phase, vision goals are used that act as smaller visions. They are elements from the strategic vision with a different focus for each phase and lead eventually to the vision for 2030.

INTERVENTION AREAS
The stroke with intervention areas show tasks for the communication advisor that include communication activities that are necessary to develop a circular community. These areas resulted from defining the main opportunities for the circular center.

TARGET AUDIENCE AND OBJECTIVE
This part puts emphasis on taking the residents into account while developing communication activities. It gives the relation between the objective of the communication activity and the target group.

COMMUNICATION ACTIVITIES
These show specific activities that are related to a certain objective, target group and intervention area. Together they form an intervention that can be developed. The activities are derived from a brainstorm session (see appendix fixme) and selected based on list of requirements explained in chapter 4 (Ch 4.3).

PARTICIPATION LEVEL
Participation levels are displayed per horizon that can be focused on. These levels evolve to the highest in the last horizon, scaling up to more involvement with residents. Together with the participation principles they serve as a stimulans for the stakeholders to involve residents in the activities presented in the roadmap.

PARTICIPATION PRINCIPLE
It refer to five principles for resident participation developed by CECI (Citizen Involvement for Circular Economy Implementation) on which actions in the roadmap can be based.

USER NEEDS
The icons reflect the needs of the residents that were taken from interviews, creative session and resident survey, explained in chapter 3 (Ch 3.2)..

PROCESS OF AND TOOLS FOR BEHAVIOUR CHANGE
On the one hand behavioural tools are displayed from the shift framework and on the other hand from the transtherorethical model of behaviour change and these are distributed over the three horizons.

Focusing one one stage is not enough to achieve behaviour change. It needs to be tackled in different stages that aligns with the mindset of the residents in a specific phase. Four categories of design strategies were defined by Ludden and Hekkert on the basis of the transtheroetical model of behaviour change (Ludden & Hekkert, 2017). They illustrate how behaviour change can be realised and the focus of design strategies in each phase. These phases are used as a guide in the roadmap to determine the behaviour emphasis in each stage.

Contemplation

The first phase is about raising awarness for the consumer about his/her behaviour that is not yet desired. The consumer is aware that they want to change something. In the roadmap contemplation relates to making the residents more aware on the social aspect of the circular center and the possibilities of contributing in repair and reuse practices.

Behaviour change tool to support this phase: Tangibility and social norm

Preparation

The second phase is about enabling the residents to make the right choices. In the roadmap the focus is on enabling the residents to know how they can contribute by giving them a platform where they can do so in an easy way.

Behaviour change tool to support this phase: Social norm, self-efficacy and sense of pride

Action

The third phase is about the actual execution of the behaviour. In the roadmap the focus is on getting the residents to participate in a campaign to make connections between residents that can help each other.

Behaviour change tool to support this phase: Self-efficacy ,Social norm and fostering good habits

Maintenance

The last phase is about supporting and maintaining the habits created and making sure that these can thrive in the community. That is the focus of the last phase in the roadmap.

PAY ATTENTION TO

These are specific points of attention that are important for each phase and that should be kept in mind when developing certain communication activities. These are derived from good practices explained in chapter 2 (Ch 2.3)

Increase **awareness** of the circular center and repair and reuse activities

KENNISE, PASSIE, EXPERTISE EN INSPIRATIE OVERDRAGEN

Awareness on meaning circular center

Awareness on possibilities of repair and reuse practices
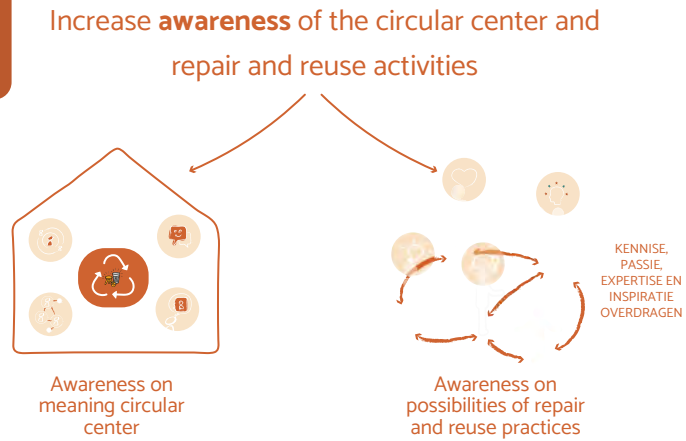
Explanation

Horizon 1 focuses on step 1 towards behavioural change, namely strengthening awareness. Communication activities that fall into this are mainly about the preparation for phase two. To reach that stage, it is recommended to undertake the following activities:

BRANDING CIRCULAIR CENTRUM- in order to market the circular center and to stimulate clear consistent language around this, there is a need for a developed value proposition that everyone can return to. Making a brand is also something that happens together with the development of the concept, here the circular center. Tools to address that value proposition are displayed on the next page.

> HOW: by developing value proposition and brand DNA for circular center or regional identity with matching visual style

RESIDENT INVOLVEMENT- to show that a lot is already happening around reuse and repair, we are looking for people who want to play an active role in this towards communication residents. Circular entrepreneurs have already indicated that they want to do this, but active residents are equally important! They are needed to show concrete, tangible examples to residents so that it seems as if one can easily contribute something. These residents play a role in the following communication activity: content creation.

> HOW: by making ambassadors not only of circular entrepreneurs but also of active residents

CONTENT CREATION- As preparation for phase two, there is a need for inspiring content with tangible examples.

> HOW: This is possible by, for example, drawing up success stories with not only circular entrepreneurs but also active residents..

PLATFORM CREATION- In order to facilitate the previous two points, we can work on a local/regional platform where people can find information about these inspiring examples and situations. This can be promoted in different formats and media channels to reach the largest possible audience.

> HOW: by creating a platform that can be visited regionally but where individual municipalities can also be viewed. More explanation will be given about this in the next phase.

Point of attention: in this awareness campaign, efforts can also be made to change the image of repair café and make it more hip. Currently, people have too different ideas, that it is only something for old people who are doing some tinkering.
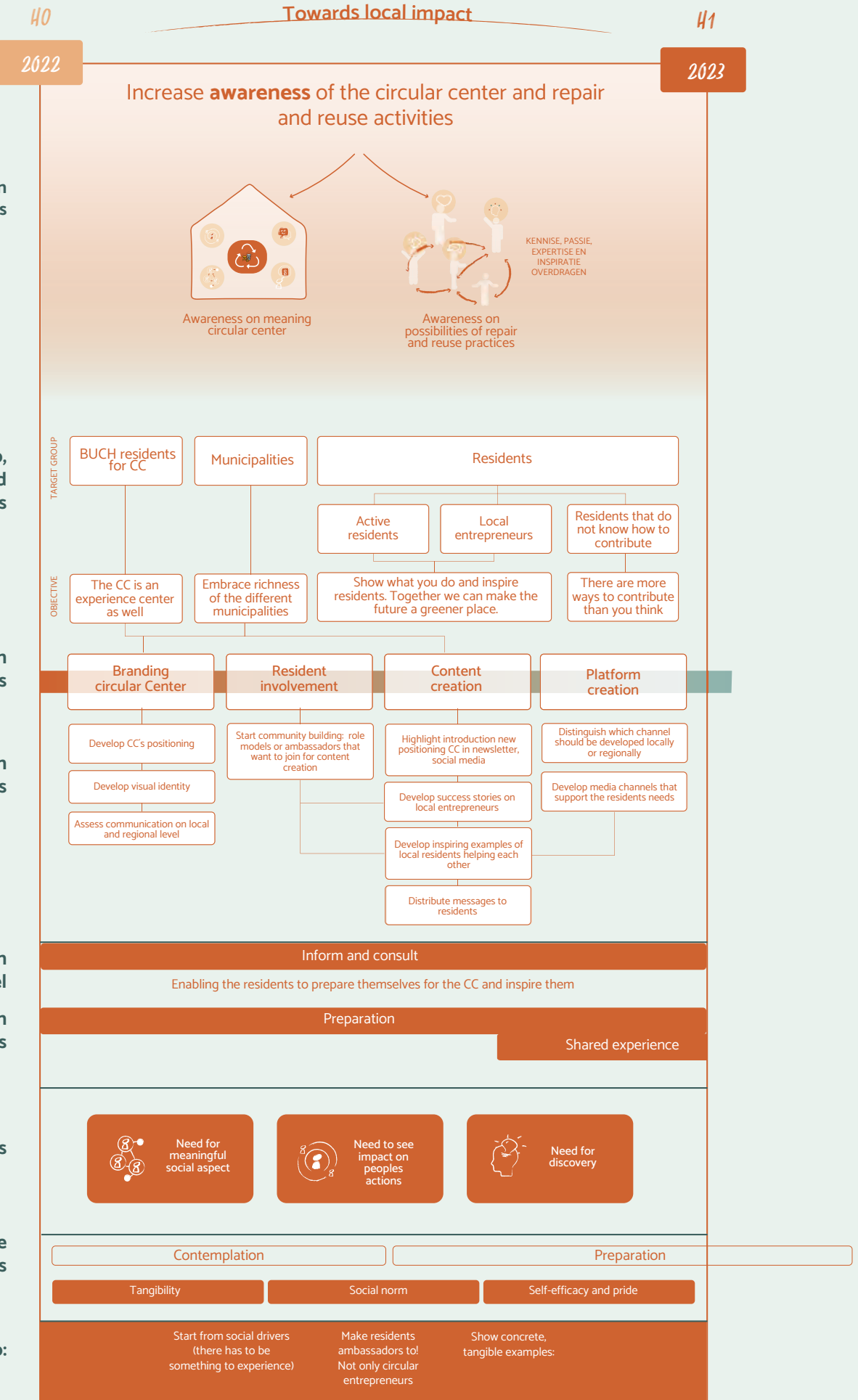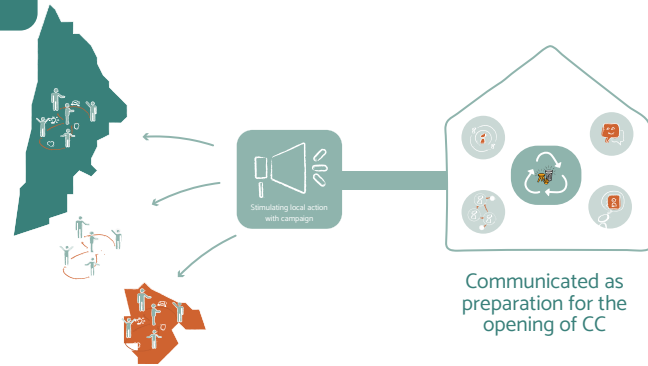
Figure 54: Horizon 1 of the roadmap

Roadmap Horizon 2

Communicated as preparation for the opening of CC

Explanation

Horizon 2 focuses on the next step towards behavioural change, namely taking action with residents. The participation principle 'shared experience' and 'experimentation' is central here. So take into account what the residents themselves can teach or want to teach to inspire each other. In this phase, a campaign is effectively launched on a larger scale to prepare residents and make them curious about the circular center:

CAMPAIGN DEVELOPMENT- to get residents involved in the sustainability story of the circular center and to encourage them to take actions, a campaign can be useful. The goal is to show what people are doing around reuse and repair to encourage others to do the same.

> HOW: by using various means of communication within the campaign (online via videos, flyers, news items in the newspaper, facebook and offline via events, physical locations) to make it clear to residents that reuse and repair is more common and here beautiful stories / examples can be found in which everyone can contribute something

Attention points communication:

LOCALE AND REGIONAL NETWORK

Partly due to the 'colour locale' from the municipality but also from the residents themselves, there is a desire to first start with a network locally and then make the switch to a regional network in which people can inspire each other. That regional network can be communicated via a regional where there are three different tabs for each municipality so that both levels can be looked at. In the grey boxes two examples are shown of how it can be tackled. On the municipal websites where people can find information about waste regulations, an extra link can be created that redirects them to the regional platform. On the next page the possible steps in using the local and regional network is presented.

APPLYING BEHAVIOUR CHANGE TOOLS

To encourage people to contribute and to donate, reuse or repair products themselves, it is useful to look at descriptive norms combined with a message that people should commit to. If people know that the majority is also participating in the campaign, they are more inclined to do so themselves. For example, x number of people are already participating in this campaign. Do you also sign up?
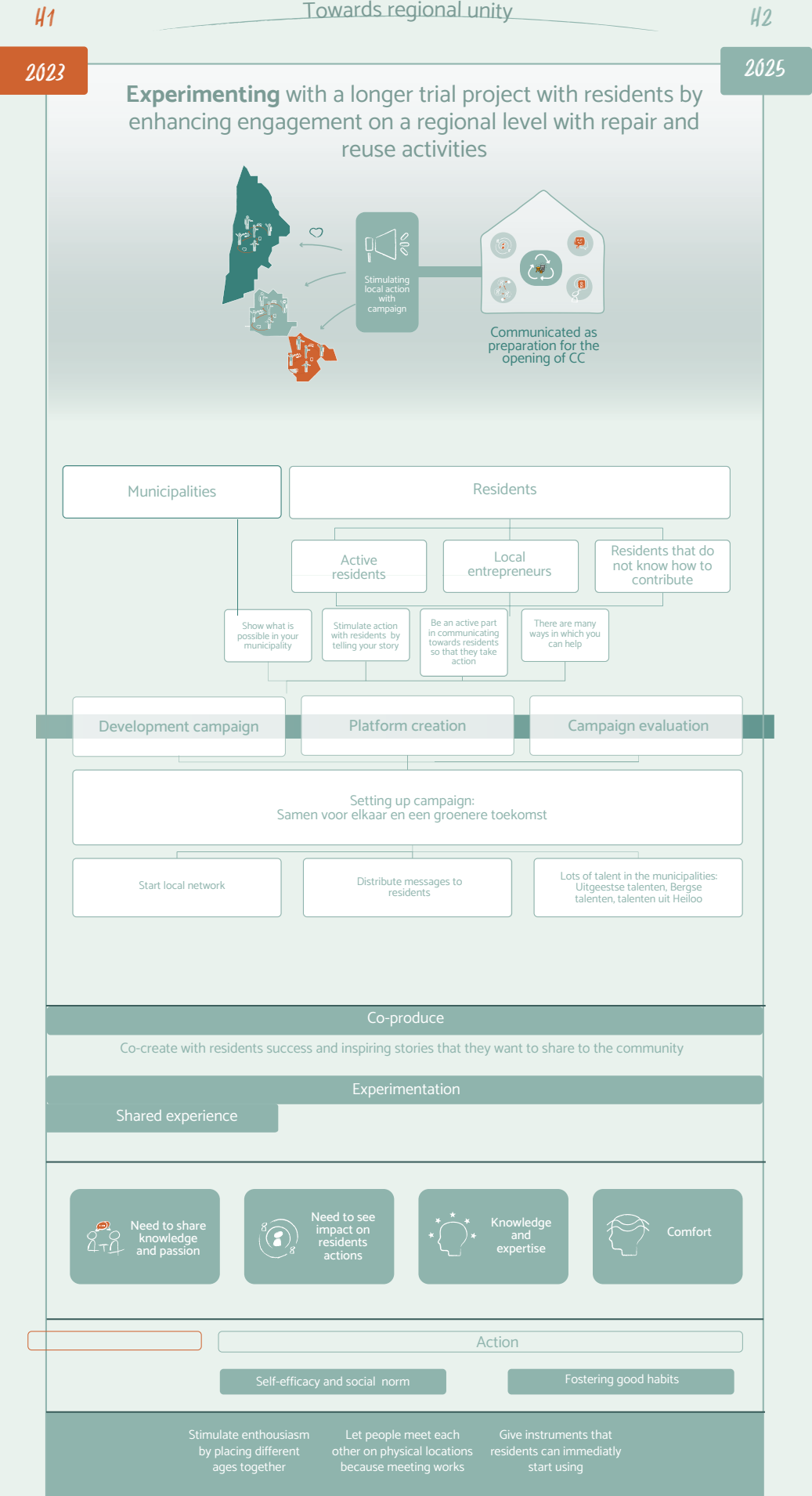
Figure 55: Horizon 2 of the roadmap

To come up with a campaign message that could be used, the 4C analysis is used and can be found in appendix E.2. That resulted in the following elements that together form the basis for a campaign. In the figure on the right, you can see how this is implemented in the guide.

The goal
Creating a campaign that
1. creates familiarity with the identity of the circular center
2. triggers residents to see other possibilities for reuse and repair practices
3. embraces the richness of the three municipalities

Strategy
1. The circular center is not only about reuse and repair, but is also a social experience center where inspiration and people come together.
   • learning from each other: place where people can find each other, exchange ideas and passions and create new connections
   • showcasing what is possible around reuse and repair and what people are already doing around it in the various municipalities
2. Everyone can contribute something, see how others do it and what you can apply from this!
   • Focus on advantages:
     • it doesn't have to be difficult to contribute
     • you don't have to be handy to be able to contribute
3. :here are plenty of doers present in your municipality, look here for inspiration
helping each other and thereby giving products a two life, if that is not beautiful!

The message
The message that can be conveyed in the launch campaign is the following: With the campaign, everyone can open their eyes, see the possibilities for repair and reuse practices and understand that building connections locally works. This is based on the two main insights retrieved from interviews with residents. local impact and stimulation respectively. Active residents and circular entrepreneurs want to have a platform to reach out to other residents. Residents themselves want inspiring examples. Making these examples tangible and concrete, making sure that residents understand their part in the network, will contribute to this assessment. Combining a voice for active residents and entrepreneurs with showing the concrete benefits for the residents creates a win-win situation. It is about building connections and helping each other while contributing to a better environment.

Three advises
1. *Creating an identity for the circular center*
2. *Adressing the regional level: 'Everyone in the BUCH contributes: contributing together to a better environment*
3. *Adressing the local level by setting up a movement: DE DOENERS*

INVOLVING RESIDENTS
Indicating which activity that can be organised in collaboration with residents to co-create the local platform with them. Same is done for the regional platform.
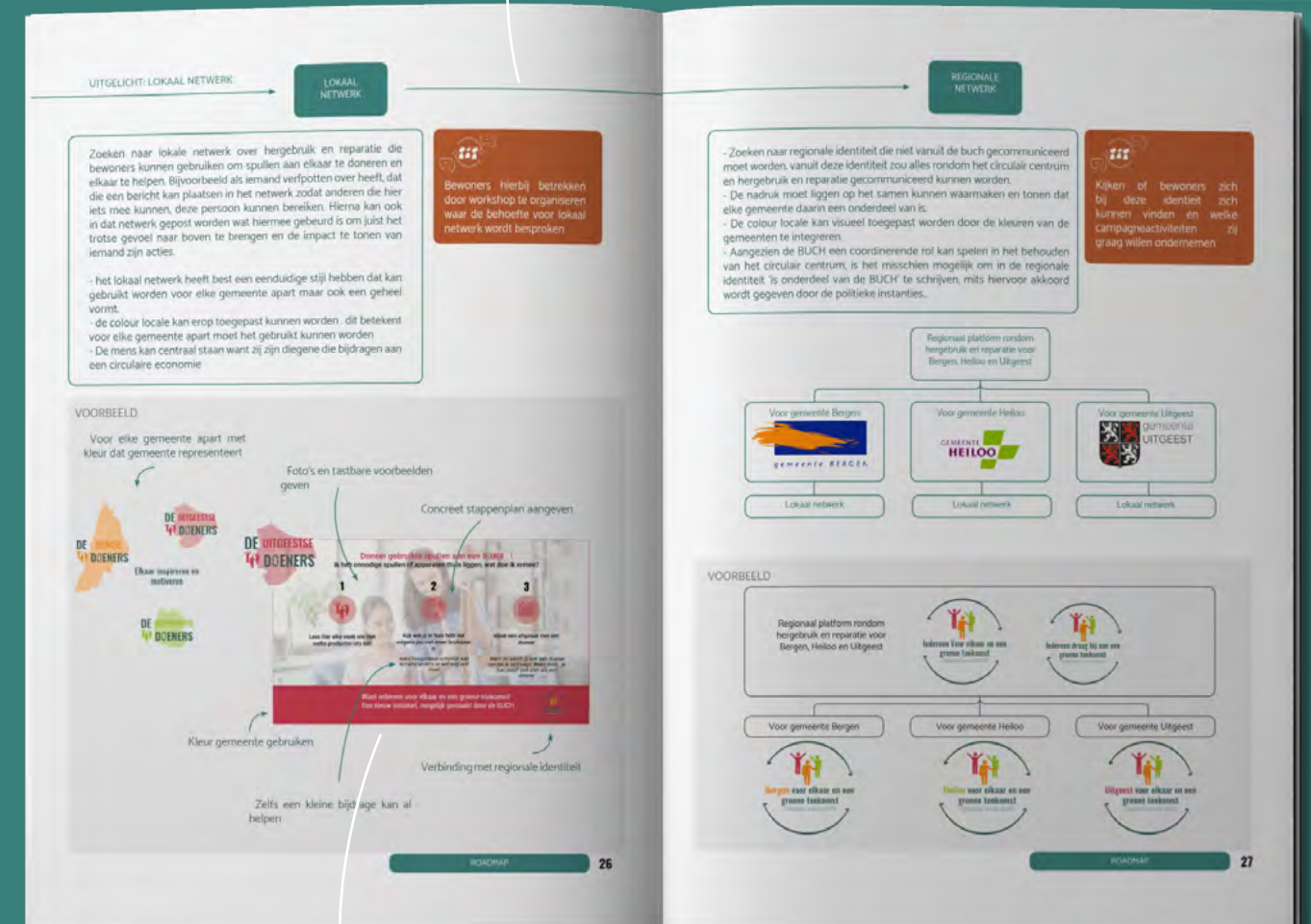
DE DOENERS;
An example is shown of the doeners movement that could be implemented with tips on which factors should be focussed. These are derived from the bahviour change tools

Figure 56: Part of the guide focussing on ithe campaign intervention
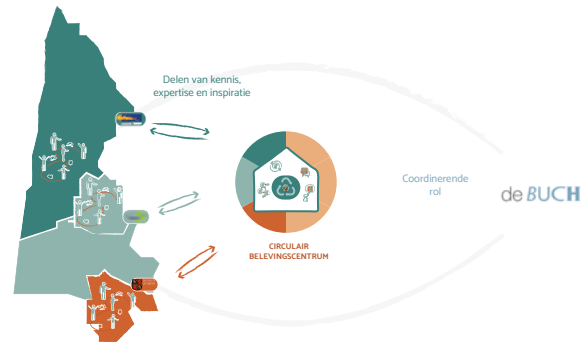
Explanation

Horizon 3 is mainly about maintaining the community that has arisen. That community already undertakes activities and events that come together in the circular center or at the local level. This is about supporting these activities where necessary to provide the necessary visibility. It is important to ensure that everyone is and remains connected enough.

MAINTAINING COMMUNITY - Here you can always look at how people prefer to be supported and through which medium they want that. continuing to listen and see what people really need ensures that the community can stay connected.

Ambassadors

Rewarding feeling

Online Platforms

Events

Social purpose
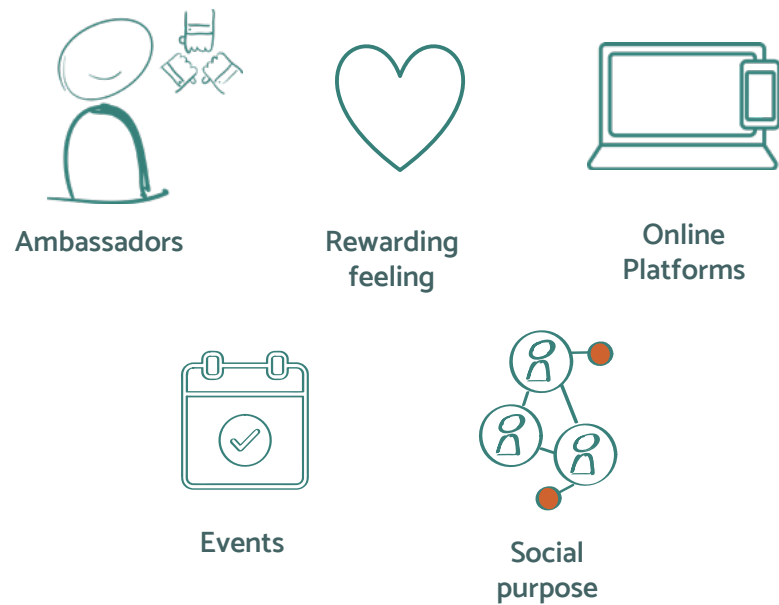
STIMULATING LIFE-LONG LEARNING - It is mainly about continuing to offer the right knowledge and necessary expertise to the residents. For this it is important to involve people closely and ask for feedback what they would like to see / learn and look for the right solutions for this.
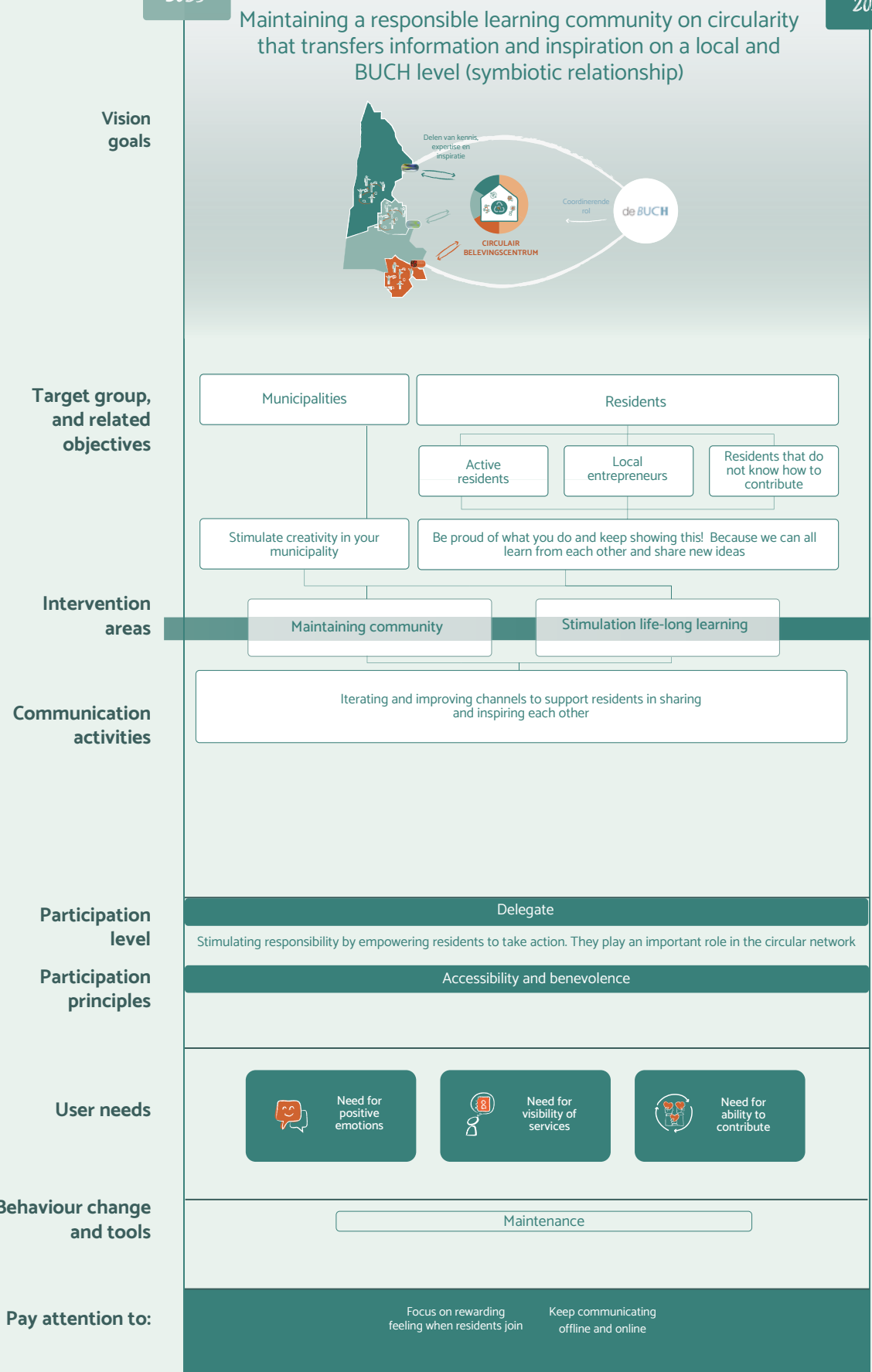
Figure 57: Horizon 3 of the roadmap

08: EVALUATION

In this chapter, the deliverable to the communication advisor is evaluated. The improvements are already integrated in the guide, explained in the previous chapters. This to avoid repetition.

Introduction

In this chapter the assumptions that still exist in developing the solution are evaluated. Testing assumptions when dealing with behaviour change is important because it leads to an outcome that is more adapted to the actual needs and wishes of the stakeholders. The aim is to strive for a solution to the problem,. not the solution itself. It requires a different perspective on the design process in itself, as you focus more on the assumption, not the outcome.

8.1 Testing assumptions

Approach

The goal is to test the assumptions that are still unclear and not yet validated enough. These include finding out the desirability of the guide in the context of the BUCH and the challenge of clear direction towards residents. In this part, the participants vary from residents from the HUB, expert in behaviour change and a communication advisor of the climate programme for the BUCH workorganisation. The number of people interviewed is written in table FIXME In order to validate the assumptions, four activities were performed, which can be seen in table 3. The first activity focuses on the communiation guide that was made for the future communication advisor. The other activities focus on the support or infrastructure residents might need on a local and regional level to be able to participate in circular activities.

PARTICIPATED IN WORKSHOP ON 'SUSTAINMABLE CONSUMER BEHAVIOUR, WHY IS IT SO HARD' BY FONTYS	
Input to know	1. Perspective versus Circular economic activities 2. What do they already know? 3. How are they already participating in Circular Economy/Activities?
Related Assumptions	The social norm is an important factor that can influence sustainable behaviuor

PARTICIPATED IN INFORMATION SESSION ON ONLINE GUIDED TOUR OF THE UPCYCLE CENTER ALMERE	
Input to know	1. what are the factors that especially work well in the center 2. How to involve residents 3. what are the current challenges
Related Assumptions	Residents want to use the facilities

EXPERT INTERVIEW WITH COMMUNICATION ADVISOR OF THE BUCH	
Input to know	1. Can the idea of a communication guide work within the BUCH context 2. What does the job of a communication advisor consists of 3. What is the influence of the BUCH on the daily functioning of the communication team
Method	In-depth interview form with 19 open-ended questions that was sent via mail.
Related Assumptions	A communication guide could be a useful tool within the BUCH context

CREATIVE SESSION	
Input to know	1. How do the residents see circularity happening at the local level when it comes to communication and participation? How do they want to contribute on a local level? 2. How do the residents see this at a regional level, in collaboration with several municipalities? What is needed at regional level from support/identity? Do they see benefits if something regional should there be and what is needed? 3. What do they think of the interpretation of the proposed functions of the CC and to what extent would they make use of them and how?
Method	Co-creation session with residents from the HUB in collaboration with Se lab (3 people joined the session)
Related Assumptions	There is a difference between what residents want to have organised on a local and regional level. There is animo for a regional idenity or communication

Table 6 The performed activities

8.2 Results and recommendations

Results workshop and digital walking tour

During the week of the Circular Economy in the Netherlands, I was able to join a wokshop on consumer behaviour organised by Fontys. In this workshop they explained why it is so hard to convince residents to act more sustainable. Another event that was organised in the Circular Economy week was a digital walking tour in the upcycling center of Almere, which is also mentioned as a good practice in chapter 2 (Ch 2.3). From these two activities, several elements that were my concept were confirmed:

1: Let residents reflect on their current behaviour.

In the workshop the lecturer pointed out that often do not pay attention to things if they were not previously alerted to focus on that. Therefore getting people to think about there current behaviour in relation to the desired one, is already a major step towards change. That is exactly the first step that the roadmap is trying to tackle, raising awareness of the possibilities so that residents understand what they can do and where. Therefore it is important to stress the first phase as a good foundation to start with before going to the second horizon in the roadmap.

2: Own local environment important for interventions

Relating to the tangibility tool of the shift framework, to make an intervention work emphasis should be put on showing interventions or actions in the local context, where the residents are. Combining tangibility with social proof (in this thesis referred to as the social norm) residents can see what is actually happening and see people participating in the desired sustainable behaviour by showing it locally. Therefore the local aspect is a crucial factor in making it easier for residents to understand why they should participate in circular activities.

3. Early adopters as important factors for ambassador development

Research on good practices and the principles that are necessary for creating a community (explained in chapter 2) show the large influence of ambassadors on the behaviour of residents. The workshop confirmed this point. Early adopters are especially important in their own environment so that residents recognize them. They can play an ambassadors role to simulate others. In this thesis the focus is also on the power of residents themselves instead of circular entrepreneurs because not everyone sees themselves in that way. The word might be too big. Some residents see themselves as an active person trying to stimulate others to do the same. There is a difference between these and therefore a distinction is made between them for the roadmap and how to approach them. They both could play an ambassadors role but in a different manner. Circular entrepreneurs could give workshops and actieve residents can co-host events or is on a smaller scale more involved, for example being part of the local doeners network. Residents initiatives work well to influence sustainable behaviour because it is approached bottom-up which created a better support base.

4. Creating tangible examples

The upcycle center in Almere is already realised and functioning. They have an experience center which is all about inspiring visitors with examples of what children made in workshops, or circular entrepreneurs or even residents. They succeeded in showing how the process works and who can contribute to this by showing concrete products made from waste. The emphasis should be on tangible examples and steps that residents can take, which is suggested in the roadmap.

As the communication guide was initially designed for the future communication advisor for the circular center, questions remain on the feasability viability and desireability. The aim was to discover if a communication advisor could work with such a guide and if it would be valuable to use in the BUCH context. The interview format that was used, can be found in appendix (FIXME). The interview questions were organised in a word document and sent out via mail. There were 19 open-ended qyuestions on the four topics mentioned in table 3. The communication guide was also sent as an attachment via mail.

RESULTS

Current situation: The colour locale affect working efficiently in the buch context

To summarise the main conclusion from the interview concerning the communication within the BUCH context, two visuals were made which can be seen in figure (FIXME. The first represents the current situation where the communication advisor have to take into account the **colour locale** which can always lead to a different approach and extra unnecessary work. Constantly, the advisor has to take into account the wishes of the councillor and the course of the city council. Each municipality requires a different approach, despite the fact that it can be about the same subject. The communication advisor explained:

> *'We still work for the four municipalities separately. But, the climate lends itself more to working together as much as possible from the start. The Ambition Document of the Climate Programme has been adopted by all four municipal councils.*

The desired situation: working together and sending joint messages

The previous named challenges lead to the desired situation where a strong core message can be communicated clearly and consistently from a regional level as a BUCH organisation with a reinforced joint message but still taking into account colour locale. However the dilemma rises if the BUCH should come out as a joint workorganisation or stay in the background:

> *'The influence of the colour locale is still too great for the efficiency with which we actually want to work. For example, sending out four press releases on the same subject, so per municipality.'*

Relation to vision on the circular center

The vision that was created in chapter 5 (ch 5.2.3) was reviewed positively by the communication advisor as he can see some common elements of the vision that returns in the communication strategy that is currently being developed.

> *'Now the BUCH is mainly an official organisation that functions in the background. In order to show togetherness, it might still be desirable to show this in the foreground.'*

An element that needs to be stressed more in the vision is the added value of working together as a buch organisation. Show to residents what can be achieved when working together. This manner more value for the buch can be created towards residents and you can show the added value.

The communication guide could be used by a communication advisor with further improvements

A communication advisor could work with a communication guide and use it as a guiding principle for consistent communication. it could help in setting up the first steps of a commnication strategy but the risk is that after this, it could be forgotten. This could be due to the fact that the guide only focusses on the communication advisor itself whereas he/she needs to communicate constantly with policy officers and councillors. These are not yet taken into account.

Some concluding tips:

1. Communication with residents should mainly be about **joint ownership.** Involve residents in the development (participation) and show in communication how you have done this. With that you give nourishment to involvement.

2. In addition, make sure that it is found t**o be 'cozy' and positive.** In addition to a meaningful visit, it must also be a place of encounter. Then the word-of-mouth advertising always works in your favor.
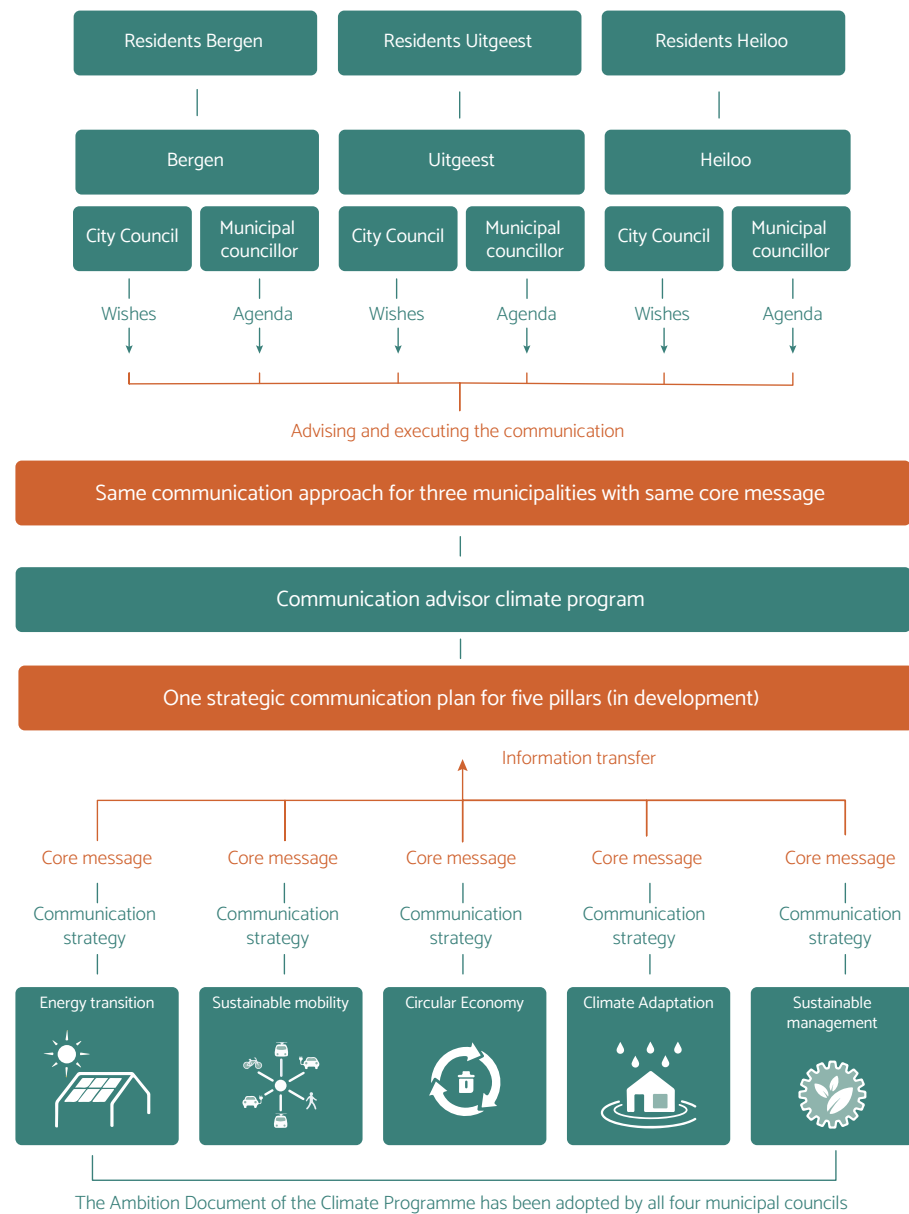

Figure 58: The desired situation of communication in relation to the climate programme

Relation to vision on the circular center

1. The association with BUCH is either not present at all, or with a negative association. Currently there is too little colour locale attention and references. The guide answers to this challenge by creating interventions on a local level that can be scaled to a regional level as well , to preserve the colour locale but also aiming to create regional involvement as well. Residents cannot see that it is related to other climate goals if this is not communicated jointly from a regional perspective

2. It also lacks "inclusion" of residents in the developments for the circular center. Sharing steps and what happens, before it is even a fact needs to be incerporated into the strategy. The guide tries to answer this challenges by visually showing in the communication activities how residents can be involved and what communication can contribute to this.

INTERNAL EVELUATION

Improvements

· **Stronger visibility on how residents are involved:** the aim of this thesis was to design a solution that involves residents in the circular center. The communication guide might seem to focus only on internal implementation rather than affecting residents. However this is not an intented outcome as residents remained a main priority throughout this thesis. The goal of the guide is to help facilitate the needs of residents so that they can be implemented. The bottom-up perspective is applied in the communication guide because the input of residents is used to make the vision and roadmap. To avoid this concern, the communication guide could be adapted by:

　　· Show in the vision how residents can be involved in every horizon
　　· Show in the roadmap steps, which steps specifically focus on involving residents and
　　　in what way a communication advisor can achieve this

These improvements can help to make the solution implementable and not something that will not be used.

· **Involving key stakeholders of the climate programme as well because together they can implement the guide**

Communication advisors do not work alone. They have to co-create communication advices and tunes in with area directors, strategic communication advisors and other related stakeholders inside or outside the communication team within the BUCH. It might be valuable to include these key stakeholders as well due to the overlapping themes with the other five pillars of the climate programme. area directors because they are the link between residents and the BUCH workorganisation. Together they can shape the approach and implement the communication activities of the roadmap. This manner an interaction is created between what can be done internally and implemented locally.

09: DISCUSSION, CONCLUSION AND FINAL RECOMMENDATIONS

In this chapter, a discussion on the graduation project is done and final recommendations are given.

9.1 Discussion and conclusion

Transitionig into a circular economy is defintely a social problem as well. That is also the reason the BUCH reached out to the Participatory City Making Lab of the TU Delft. They set their ambitions to develop a circular center that invites residents to think in a circular manner and see the value of products by means of participation. By doing this, they recognise the curcial role residents play in the development of the circular center. If they will visit and make use of the center is completely dependend on the sustainable choices residents will make, which includes looking behaviour change. For this reason, this thesis researched how behaviour change tools can be used to encourage residents to be involved in circular activities and the circular center.

RQ 1: What are the values that residents want to see in the circular center?

From the research it became clear that in previous graduations residents were asked on their current repair and reuse mindset but not their perspective on the circular center. To make the circular center a success the input of residents and their involvement is crucial. Therefore interviews on locations, a co-creation session and two surveys were done.

The reasons for not participating in circular activities related to two main factors. Namely self-efficacy, not knowing that a small action can contribute and social norms, not seeing what other residents are doing. These two factors are connected to each other because if residents cannot see concrete and tangible examples of what is possible with their products, they cannot act upon it. It showed the importance of creating visibility for residents on the activities that other residents do and giving them concrete examples how they can contribute.

The perspective of residents on the circular center was found to relate most to tangibility. Currently residents are not sufficiently aware on the meaning and the social aspect of the circualr center and do not feel involved on a regional BUCH level. That is mainly due to the challenge in th BUCH on providing clear and consistent communication on a regional level The desire of each municipality to keep their 'colour locale' instead of showing the added value of working together on regional challenges such as a circular center contributes to this challenge.

From all the findings five fundemental needs were found with nine contextual needs. Residents are specially motivated by intangible experience with a social purpose that create a stimulating environment. On top of that the ability to contribute and create impact showed to be an important need as well. That relates to residents sharing knowledge and passion with other residents that need expertise. It was found that it is about creating interactions between residents that can help each other.

Therefore the best way to involve residents is by looking for ways to facilitate these three factors. That involved defining the possible relationship that could be developed, answering research question two.

RQ 2: What can the circular centre offer and what relationship can arise between residents and centre

For the BUCH the previously named findings have several implications on the relationship between residents and the center. First of all the relationship should emphasise a positive and stimulating environment in which residents can find concrete and tangible examples on what is possible and how they can contribute. Second, it also means that before creating a regional connection with the circular center, local involvement should be emphasised as the influence of the 'colour locale' is still too great .

As a result the relationship between residents and the circular center is proposed to be symbiotic. It aims to establish an interaction between residents locally and on a regional level. The 'colour locale' is integrated in this vision as a crucial first step in involving residents in circular activities and the circular center. Looking for ways to implement this relationship is a challenge, which introduces the next research question.

RQ 3: What design solution can enhance the defined relationship?

For residents understanding the meaning of the ciruclar center and knowing how to contribute is difficult when there is no infstrastructure in place yet that provides this, both on a local and regional level. The challenge of communicating cosistently and regionally on common challenges such as the transition into a circular economy does not stimulate residents to participate. Therefore the circular center and circular activities should be promoted much more, both on a local and regional level.

By looking at literature on good examples it was evident that the power of good marketing and communication cannot be underestimated. Residents should be made aware from the start and need a trigger to be able to participate in circular activities. The BUCH's current challenges on consistent and clear communication increased the opportunity of designing a solution that would connect the residents with the circular center on a regional level. Climate change lends itself more to working together as much as possible from the start. As a result the final design aims to strenghten the relationship between residents and the circular center by providing communication activities that can be implemented in collaboration with residents for the development of the center.

Final conclusion

This projects shows the BUCH how the regional challenge of creating a circular center can be developed in collaboration with the residents. By aiming to create a symbiotic relationship between the residents themselves and the circular center, an interaction between local and regional activities are stimulated. This to scale up from creating local impact to a regional one with involvement of residents. Residents do not yet feel involved in the circular center because they do not feel connected to the BUCH organisation. That is why we must first look at awareness at the local level so that people see what they themselves contribute and can feel part of the transition to a circular economy. This can be achieved by taking the residents step by step through the right communication method that shows them what their contribution is linked to circular initiatives. In this, working together as the BUCH is important, especially when it comes to joint messages such as the climate. This reinforces the message that we stand together. The approach can be adapted to the needs of the key stakeholders. Each elements presented can be used separatley depending on the type of conversation context.

With this proposed approach, the key stakeholders of the climate programme can implement communication activities in collaboration with residents. As a result, residents can be seen as a primary stakeholder that needs to be involved in as much as activities as possible. The approach can help to create a unyfing vision for the circualr center that is supported by residents as well because they become a part of the process. The solution contributes to the strategic communication plan that is currently being developed for the climate programme within the BUCH

8.2 Recommendations and limitations

A design project is never finished and iterations can me made infinitifely. Therefore there are several points that are recommended to be improved if the solution will be implemented.

First, during the development of the solution it became clear that the approach will not be implemented if only dependend on a communication advisor. After internal evaluation an iteration was done on the guide. It proposes that the guide can be used by the key stakeholders of the climate programme. For this, a team has already been set up.

To create the unifying vision presented in the approach, it is recommended that a discussion meeting on the vision and communication acitivites is done by these key stakeholders. That has not been performed in this thesis. In the meeting the organisation of the activities can be discussed and on which platforms they can be communicated. That is suggested to be the first important step as all the other communication activities will need to be posted on the same platform to offer consistent and clear communications.

Members of the city council are also part of the key stakeholders and can represent the perspective of the residents. In addition, another session with residents of the HUB should be performed because they can co-create the vision and communication activities and express which key messages will resonate with them and finding out if this is the support they need. It suggests an iterative process where activities are performed in collaboration with residents.

Next to that it is recommended that the work current workformat should be made usable by different stakeholders depending on the type of context. Currently the guide is a general document, showing the approach. However when elements of the approach need to be co-created with residents, it can be adapted to fit the purpose of the session. For example the examples given for specific communication activities can be evaluated separately. If the approach would work for the circular center, the aim is to apply it to the other four pillars of the climate programme, creating a common approach by sending joint messages to residents.
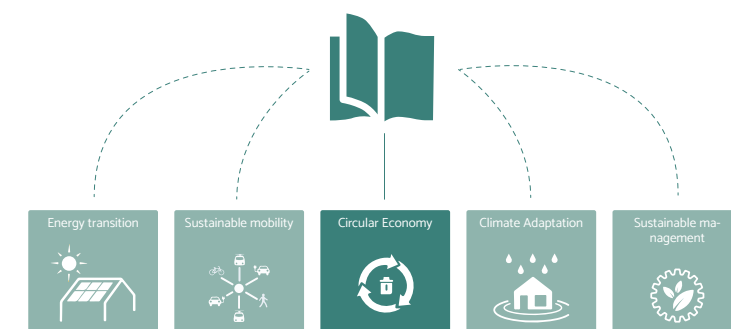
Figure 59: Scalability of the approach

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