

Co-creation and the role of expert knowledge herein

A case study of the Hegewarren



Master thesis

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Preface

Dear reader,

This master thesis forms my final product of the Environmental and Infrastructure Planning master at the University of Groningen. Based on my interest in peatland problems, I became involved in the Hegewarren project. After getting information on the project, the focus of the thesis turned towards the unique approach that was conducted in the project: a co-creation process.

Several persons have been important in writing this thesis, for whom I would like to express my gratitude. In the beginning I had some conversations with my supervisor Dr. Ferry Van Kann about choosing a topic. Then, I came in contact with my other supervisor Dr. Cors van den Brink, who helped me to contact the employees of Royal HaskoningDHV who were/are active in the Hegewarren project. My supervisor and main contact at Royal HaskoningDHV, Jens Schepers, helped me to find my way in the bureau and in the project. When the research topic and questions were finalized, it turned out that the topic was similar to the research by PhD-candidate Maria Rădulescu. Therefore, Maria and I worked together a lot and we combined our interview questions. Also, regular meetings took place with Maria and both our supervisors in which the progress and the content of the thesis were discussed. Furthermore, the interviewees were important for this research, as because of their willingness to participate, data were collected.

I would like to thank the persons mentioned above, as they enabled me to do my research.

Reinder Boomsma

Aldeboarn, 9 July 2021

Abstract

Co-creation is increasingly used in the public sector to deal with complex societal and environmental problems. However, there is relatively little research that analyzes co-creation practices and the role of experts and professionals in co-creation processes. Therefore, the aim of this thesis is to study how experts are best able to convey their knowledge to the others involved in the process, in a way that it contributes to the project content wise and satisfies the others involved. This study focuses on one case study: the co-creation process in a peatland polder, the Hegewarren. The main focus of the research falls on the experts' interaction with the other professionals, and on the interaction between the experts and the non-professional actors. Internet research, document analysis, action research, and in-depth semi-structured interviews are used as methods in this research. Four main conclusions are drawn from this study. First, the way of contracting influenced the way the experts operated; having a single contract or a collaboration agreement would improve this collaboration. Contracts should be clear and not too complicated since the co-creation process itself needs already a substantial amount of effort and energy. Second, talking through the expectations in the beginning would have helped the project, as this would have prevented the situations in which the actors did not know what to expect from each other. Especially for the role of experts, for which a role could be aimed for which seemed to be most appreciated in this project: first listening to the different interests, then wrapping up insights and create with their knowledge a product, and subsequently communicating the product to the co-creation team again in a way that it is understandable. Also, the products need to be in time, and should not be focused on the details but rather give the global effects of the designs. Third, experts should invest time and effort in the beginning of the process to become familiar to the area. Especially in a co-creation project, where there is continuous interaction with local actors, it is important that experts know where they talk about and no energy is lost in misunderstandings regarding the area. Finally, clear allocation of responsibilities and roles would contribute to better collaboration between experts and the other actors. Especially the role of project manager should be clearly assigned as this role seemed to be very important in this project.

Keywords:

Co-creation, experts, expert knowledge, professionals, local knowledge, collaboration, interaction.

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List of abbreviations

CO₂ – Carbon dioxide

NGOs - Non-governmental organizations

1 Introduction

This chapter introduces the background of the research; the problem of soil subsidence common to peat meadow areas, and the Hegewarren project. Based on the problem description, the objective of the research is introduced and the research questions are formulated.

1.1 Background

1.1.1 Soil subsidence

Low peat soils are subsiding in the Netherlands. As around 9% of the Dutch soil consists of low peat, a large area of the country faces the consequences of soil subsidence (van den Born, et al., 2016). The groundwater level has been lowered in these areas for agricultural purposes (van den Born, et al., 2016). The remaining peatland above the groundwater level subsides as a result of the dewatering, shrinkage, compaction, and oxidation (Pronger, et al., 2014; Rodriguez, et al., 2021; Stephens, et al., 1984). As a result, there are several consequences and costs associated with soil subsidence: the costs of pumping stations and dikes, the damage to buildings' foundations, the release of nitrogen and phosphorus in the waterbodies by the decomposition of peat, and the emission of greenhouse gases (mainly carbon dioxide, methane, nitrous oxide) in the atmosphere (Pelsma, et al., 2020; Van Beek, et al., 2007; van den Born, et al., 2016). The subsided peatlands are also more vulnerable to seepage from higher water levels in adjacent areas. This water could be brackish, and therefore salt intrusion could occur. According to Pelsma, et al. (2020) and Van Beek, et al. (2007) this causes trouble in nature, agriculture, and drinkwater.

Thus far, mainly technical solutions are thought of and proposed for different pilot areas in the Netherlands by which land use does not have to be changed, like the underwater drainage, adjustable drainage, and flexible waterlevel management (Grootjans, et al., 2019). However, investments in underwater drainage techniques turn out to be very expensive (Raad voor de leefomgeving en infrastructuur, 2020), and these measures do not seem to drastically reduce carbon dioxide (hereafter: CO₂) emissions and soil subsidence if current land use is being maintained (Grootjans, et al., 2019; Pelsma, et al., 2020). Another solution is to enable paludiculture in which cultivation is still possible with higher water levels. Sphagnum and cattail are examples of paludiculture which can be cultivated with potting soil and insulation materials as potential products (Van de Riet, et al., 2014). Paludiculture retains peat due to the higher water levels and therefore the main benefits are reducing emissions and reducing the subsidence of soil (Wichtmann & Joosten, 2007; Van de Riet, et al., 2014; Karki, et al., 2016). Although paludiculture seems promising in terms of these benefits, it is still in the experimental phase, with no production lines and business models available (Grootjans, et al., 2019; Van de Riet, et al., 2014). Further, according to Grootjans, et al. (2019) paludiculture is not suitable for meadow birds.

Yet another solution is the trading of carbon certificates. In such carbon credit schemes, land owners can sell certificates for the amount of greenhouse gases they have been able to reduce. The reduced emissions are a result from setting up groundwater levels and therefore greenhouse gases are stored in peat instead of being emitted as a consequence of the oxidation of peat. These carbon credit schemes were initiated in 2009 in Germany with the project MoorFutures (Joosten, et al., 2015). In the Netherlands a similar project – Valuta voor Veen – has been launched by several actors within the Province of Fryslân (Valuta voor Veen, 2021). Although solutions such as paludiculture and carbon credit schemes exist, the most important aspect in reducing emissions is that the groundwater level needs to be raised to 10-20 centimetres below surface level (Grootjans, et al., 2019).

1.1.2 The Hegewarren

The Province of Fryslân has developed a program (Veenweideprogramma 2021-2030) with ambitions and measures on how to deal with soil subsidence, greenhouse gases, sustainability of agriculture, and the robustness and climate proof water system in its province (Provincie Fryslân and Wetterskip Fryslân, 2021). In this document the Hegewarren polder is presented as a promising area, where there is the opportunity to take measures in terms of finances, social energy, and willingness. The measures need to be taken because of its primary problems regarding soil subsidence, like those mention in the former paragraph.

Figure 1.1 illustrates the main problems of the area. In the upper part of the picture the current situation of the polder is sketched. The polder consists of a two-meters thick layer of peat. By draining the polder, the peat layer shrinks, greenhouse gases are emitted, and the land subsides. Because of the area's location, this can result in huge consequences for water management: desiccation of the surrounding nature areas, including De Alde Feanen (Provinsje Fryslân, 2019; Toekomst Hegewarren, 2021). The lower part of the figure shows the future situation if current policy and use of the polder are maintained. The blue arrow represents the desiccation of the nature area. This arrow is bigger in the lower part of the figure and therefore desiccation is higher. As the polder subsides and its surrounding water levels are being lowered, the amount of water demanded by the Hegewarren will be increased and therefore the polder causes the nature area to desiccate further.

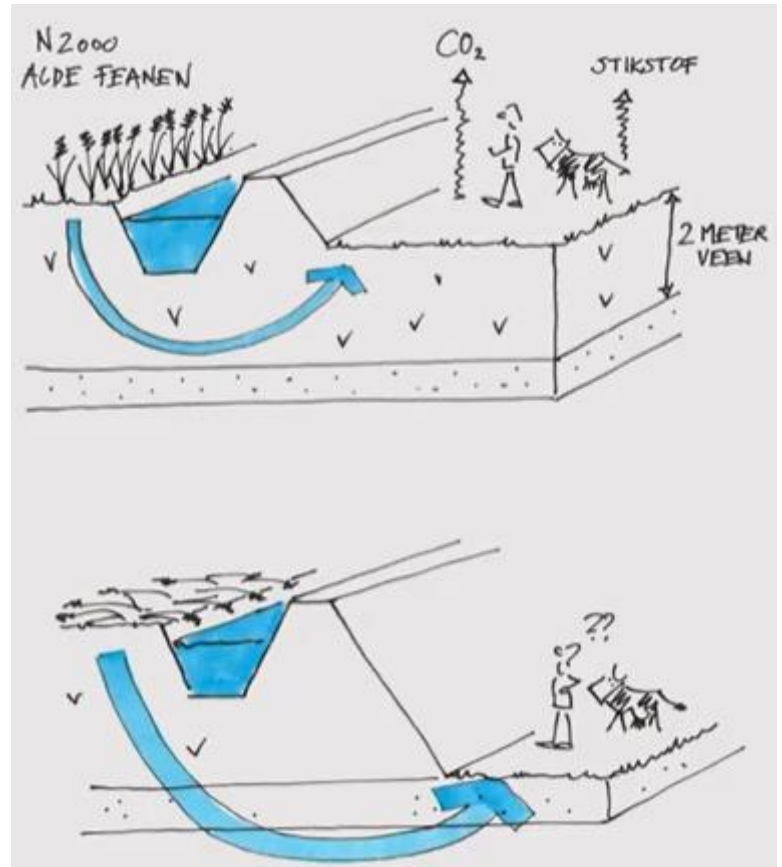


Figure 1.1 Sketch of the soil subsiding process in the Hegewarren (Open Kaart, 2020)

The lower part of the figure shows the future situation if current policy and use of the polder are maintained. The blue arrow represents the desiccation of the nature area. This arrow is bigger in the lower part of the figure and therefore desiccation is higher. As the polder subsides and its surrounding water levels are being lowered, the amount of water demanded by the Hegewarren will be increased and therefore the polder causes the nature area to desiccate further.

De Alde Feanen is part of the European network Natura 2000 and therefore the Netherlands must ensure that the site is managed in a sustainable manner, both ecologically and economically (European Commission, 2020). This means that the species and habitats that are present in the area should be protected and therefore it is not allowed to negatively impact this nature area. Also, in the Paris Climate Agreement the urgency of reducing the emission of greenhouse gases from peatlands is raised (Pelsma, et al., 2020). Furthermore, the European Commission provided the Netherlands with recommendations for their Common Agricultural Policy in which restoration measures of Natura 2000 areas and peatlands are stressed (European Commission, 2020).

In an online information meeting, the main characteristics of the Hegewarren were mentioned (Open Kaart, 2020). The Hegewarren is a polder consisting of 360 hectares of agricultural land. The average thickness of the peat layer is 2 meters and the water level of the polder is between 60-90 centimeters below ground level. The following functions are present in the Hegewarren:

- 6 dairy farms;
- 1 horse farm;
- Reed company;

- Gas extraction company;
- Recreational companies;
- Dead-end road with a ferry for cyclists and pedestrians; and
- A parcel of blue grassland.

1.1.3 Process in the Hegewarren

On the 27th of November 2019, the Provincial Council decided to start exploring a new design for the Hegewarren (Toekomst Hegewarren, 2021). Hereby, their main objective was to look for the optimal societal design of the area. Whereas the problems with peatland form the basis and the starting point of the process as they are decisive for a sustainable and livable future of the Hegewarren, other aspects and interests representative of the area, like improving the water system, recreation, farming and economy, are also included (Toekomst Hegewarren, 2021).

Therefore, to bundle these different aspects and interests and to develop a plan for dealing with the problems in the Hegewarren, a co-creation approach was deemed appropriate. The co-creation process is initiated by the Province of Fryslân, Wetterskip Fryslân (waterboard), and the Municipality of Smallerland (Toekomst Hegewarren, 2021). Herewith, on the website of the project (Toekomst Hegewarren, 2021), co-creation is described as “developing of chances for a new design by and with stakeholders from the area”. This is based on the consideration that communication with people who live, work, and stay daily in the area, results in the most promising future (Toekomst Hegewarren, 2021). On the website it is mentioned that participation in the co-creation team is considered to be contributing to a constructive dialogue, without the need of agreeing on the design variants. In this, there will be conflicting interests and it is important that different opinions are heard in the process. Above all, participants have legal rights and are able to object to decision-making (Toekomst Hegewarren, 2021).

The timeline of the project is given in table 1.1 (Toekomst Hegewarren, 2021). Initially the project was planned to end on 1 April, but it was delayed with three months because more time was needed. Besides the co-creation workshops, also college tours and thematic sessions were organized to give experts the possibility to present possible future functions or a specific expertise.

Table 1.1 Timeline

Date	Activity
10 November 2020	Information meeting in which the process was explained, dilemmas were shared, and questions could be asked. Based on responses to this meeting, the co-creation team was formed.
19 November 2020	Workshop 1 – In this meeting participants got to know each other, and information and ideas were exchanged.
10 December 2020	Workshop 2 – The first ideas were translated into ingredients for the future.
21 January 2021	Workshop 3 – Three promising directions for the future were formulated. Furthermore, an assessment framework was created to be able to map the differences between the three directions.
25 February 2021	Workshop 4 – The spatial possibilities for the shipping route were explored.

29 April 2021	Workshop 5 – The different design directions were evaluated by experts. Further optimization and alterations were proposed and discussed.
27 May 2021	Workshop 6 – The co-creation team reflected on the different designs and reviews with pros and cons were determined for the designs.
24 June 2021	The results were shared with other stakeholders and interested parties.
8 July 2021	Governmental administrators gave their review on the designs.
After July 2021	The designs will be updated and further refined. The end results will be given to the governmental administrators and then the decision-making phase starts.

1.1.4 Co-creation team

This co-creation process is led by Open Kaart, a company specialized in developing designs by means of co-creation. An architectural bureau - H+N+S Landschapsarchitecten - is involved for supporting the process with ideas and drawings, and Royal HaskoningDHV is involved for supporting the process by computing and modeling the ideas (Toekomst Hegewarren, 2021). Other members of the co-creation team are:

- Inhabitants:
 - A representative of the farmers in the Hegewarren is present in the team;
 - Two inhabitants which live in and own a recreation company in the Hegewarren;
 - Two owners of recreational homes in the Hegewarren; and
 - An owner of a sailing school which is located adjacent to the Hegewarren.
- Neighbors:
 - Interest groups of the surrounding villages Oudega, Eernewoude, De Veenhoop, Grou and island De Burd, and of nature area Nationaal Park De Alde Feanen.
- Inter-regional interests:
 - Representatives of aquatics KWV Frisia and the Watersportverbond;
 - Boating/shipping representatives Havencluster Drachten and an interest group of inland shipping;
 - Nature managing organization It Fryske Gea; and
 - Association for agricultural nature conservation Noardlike Fryske Wâlden.

In figure 1.2 these actors are geographically visualized in the Hegewarren polder (Toekomst Hegewarren, 2021).



Figure 1.2 Actors in the Hegewarren (Toekomst Hegewarren, 2021)

1.1.5 Objectives and preconditions

In the co-creation process, four design variants have been developed for the Hegewarren in order to have multiple designs and ideas to choose from. Eventually, these variants were handed over to the Provincial Council, which will decide upon next steps (Toekomst Hegewarren, 2021).

The clients – Province of Fryslân, Wetterskip Fryslân, and the Municipality of Smallingerland – developed multiple goals to be integrated in the process. They strived to embed as many goals as possible in the designs, and each design was assessed based on these goals (Toekomst Hegewarren, 2021):

- Minimizing soil subsidence;
- Reducing the emission of carbon dioxide;
- Reducing the Hegewarren to cause desiccation in De Alde Feanen;
- Lowering costs for maintaining the water system in the polder;
- Contribute to climate adaptation with a more robust water system;
- Strengthen the recreation structure;
- Improving water safety (inland shipping and recreational boating);
- Reducing the emission of nitrogen;
- Contribute to the objectives of the regional energy strategy (Regionale Energiestrategie) regarding sustainable energy;
- Contribute to wide prosperity; and
- Contribute to spatial quality.

Furthermore, three preconditions needed to be taken into account throughout the co-creation process and in the designs (Toekomst Hegewarren, 2021):

- The groundwater levels must increase to at least 40 centimeters below ground level;
- In at least one design variant a potential shipping route to the village of Drachten must be mapped; and
- Other peatland areas must be able to learn from the Hegewarren.

1.2 Problem description

Lots of activities in which a form of collaboration takes place are called co-creation (Rill & Hämäläinen, 2018). Also, in literature the communicative endeavor of co-creation gained increasing interest as it emphasizes collaborative interaction in networks and partnerships (Torfing, et al., 2016). The concept of co-creation descends from the business domain (Prahalad & Ramaswamy, 2004), and it shows up in different sectors, like organizational development, marketing, and design (Rill & Hämäläinen, 2018). In the public sector the concept has recently started being used more often to deal with complex societal and environmental challenges in an innovative way (Rădulescu, et al., 2020). Multiple definitions of co-creation exist in literature, and it has even been suggested that it is just a buzzword (Harkison, 2018).

Beside the increasing use of collaborative and co-creative approaches in planning projects, the role of planners and experts also changes both in theory and in planning practice. To provide plans with a higher level of reality, expert knowledge is already often used in the plan preparation phase of projects (Spit & Zoete, 2003). Plan making and plan execution are becoming more intertwined, and both in environmental planning and project management expert knowledge is expected in these project phases (Spit & Zoete, 2003). Some scholars researched the role of experts and expert knowledge in planning processes. For example, Özdemir (2019) investigated this in a case study and concluded that the role of experts can vary between a communicative and agonistic role; bringing parties together to take action and make decisions, and facilitating differences of opinion and questioning the process. However, the gap between these two concepts and the role of expert knowledge in different contexts needs to be further explored (Özdemir, 2019).

Content wise relatable to the Hegewarren project, Arciniegas and Janssen (2012) investigated the operation of workshops and the use of digital maps to design a peat meadow area. The area was designed by means of consensus building with a few stakeholders. However, only institutional parties were involved, and residents or farmers were not invited in these workshops. Although the digital maps and the workshops were considered as useful, they also concluded that more research and detailed information is necessary in order to be able to draw conclusions from the process of workshops and digital maps in area-based approaches with a larger amount of participants (Arciniegas & Janssen, 2012).

Concludingly, there is relatively little research on analyzing co-creation practices (Leendertse, et al., 2016; Puerari, et al., 2018) and on the role of the experts/professionals in co-creation processes (Steen & Tuurnas, 2018). Therefore, as mentioned by Arciniegas and Janssen (2012) and Özdemir (2019), researching co-creation workshops and the role of experts and their knowledge in different contexts can be valuable.

1.3 Research objective

In line with the research gap ascertained in the former section, the aim of this research is to get insight into the role of experts in co-creation processes and into how experts are best able to convey their knowledge to the others involved in the process in a way that content wise contributes to the project and satisfies the others involved. The interaction of experts with the other professionals will be studied, and also the interaction between the experts and the non-professional actors will be studied. Based on a mix of research methods applied in this case study, conclusions consisting of pros, cons, and other lessons regarding the co-creation process will be drawn.

This research can potentially be valuable from both a theoretical and an empirical perspective because research about co-creation processes in spatial planning is relatively new, especially in green-blue projects, and more specifically in designing future variants for a peat meadow area. Arciniegas and Janssen (2012) did research the operationality of workshops in designing a peat meadow area, but only

limited actors were involved. In the Hegewarren co-creation process a wide range of actors are involved. For practice, this research could also be valuable since there is an expectation that more projects countering soil subsidence in peat meadow areas will be developed in the near future, both in the Netherlands and worldwide. In the project goals (§1.1.5) it was already mentioned that the Hegewarren should serve as an exemplary project, a source of inspiration, and learning for other future projects.

1.4 Research questions

The research objective leads to the following main research question:

How can expert knowledge be used in a co-creation process – like the Hegewarren – in a way that it is effective and appreciated by the others involved?

This main research question will be sustained by the following secondary research questions:

1. *What is co-creation and does this concept fit theoretically with the Hegewarren project?*
2. *Which interests are at stake in the Hegewarren and how do these connect to theory on co-creation?*
3. *What is the role of expert knowledge in a co-creation process and what determines effectivity?*
4. *Who are the experts in the Hegewarren project, what do they do, and how do they do this?*
5. *How takes communication place between experts and the other actors in the co-creation process in the Hegewarren project?*
6. *How do the different actors experience the co-creation process in the Hegewarren project?*

1.5 Outline of the thesis

The concepts from this chapter's introduction and its research questions are approached from theory in chapter 2. Also, since secondary research questions 1-3 are mainly theoretical, these are largely answered in the second chapter. In chapter 3, the methodology is explained. Then, case study documents are discussed in chapter 4. Chapter 5 contains the results which are divided into views of professionals and non-professionals. The thesis ends with a discussion and conclusion in chapter 6 in which the results are elaborated upon based on this thesis's theory, and the main research question is answered.

2 Theory

Following from the problem description, that there is relatively little research on analyzing co-creation practices and on the role of the experts/professionals in co-creation processes (§1.2), theories related to this problem description are identified in this chapter. The theories have been selected based on their appropriateness and suitability relating to the research questions, and are derived from international peer-reviewed articles. First, the concept of co-creation is identified in section 2.1. Thereafter, in section 2.2, the roles of experts are explained. Subsequently, in section 2.3 the secondary research questions 1-3 are largely answered based on this chapter's theory. The chapter ends in section 2.4 with a conceptual model in which concepts from this chapter are connected by using a visual representation.

2.1 Co-creation

Within this section, the concept of co-creation is explored based on literature, in order to assess whether it theoretically fits within the Hegewarren project. Based on literature, definitions of co-creation are outlined (§2.1.1), its relationship with planning theory is indicated (§2.1.2), and its different phases are explained (§2.1.3). Thereafter, forms of participation (§2.1.4), formal and informal aspects of co-creation (§2.1.5), and points of attention are indicated (§2.1.6).

2.1.1 What is co-creation?

Forthcoming from the problem description, the concept of co-creation descends from the business domain and is today applied in various sectors. It is also increasingly used in the public sector as a means to deal with complex societal and environmental problems. Prahalad and Ramaswamy originally defined it as “the practice of developing systems, products, or services through collaboration with customers, managers, employees, and other company stakeholders” (mentioned in Ramaswamy, 2011, p.195). Taking this collaboration to the front, co-creation is explained by Ramaswamy and Gouillart (2010) as a theory of interaction used to unleash the creative energy of people. A resembling definition is given by Sanders and Simons (2009), who describe co-creation as a form of collective creativity, experienced by at least two people with the goal to create something that is not known beforehand. Cottam and Leadbeater (2004) further stress this interactive collective creativity, but also mention the different views that are critically evaluated in co-creation and in which a new combination of local and expert knowledge is sought. Distributed and shared leadership are common terms in defining co-creation, and expertise is distributed across actors instead of being controlled by a few individuals in privileged positions (Bennet, et al., 2003). For example, citizens or residents are often considered as experts who can best respond on the neighborhood's opportunities and issues because of their local knowledge (Brandsen, et al., 2014). Another similar definition is given by Rill and Hämäläinen (2018, p. 22-23), as they define it as “a process, in which teams of diverse stakeholders are actively engaged in a mutually empowering act of collective creativity with experiential and practical outcomes.” Furthermore, they argue that co-creation is not specific to a particular discipline, but is rather a process that – through intentional experience design – can add value and increase innovative potential. Innovation occurs by including people with knowledge and expertise (Akhilesh, 2017). To position it visually, Rill and Hämäläinen (2018) developed a triangle in which co-creation is ‘the space between’ (figure 2.1). It is surrounded by aspects that are important in the creative journey of co-creation. The leader of the journey – a consultant, facilitator, organizational leader, designer, or educator – has to make sure to create and ‘hold the space between’, understood as ‘creating the container’ in which people can safely and authentically speak and take risks (Rill & Hämäläinen, 2018, p. 32).

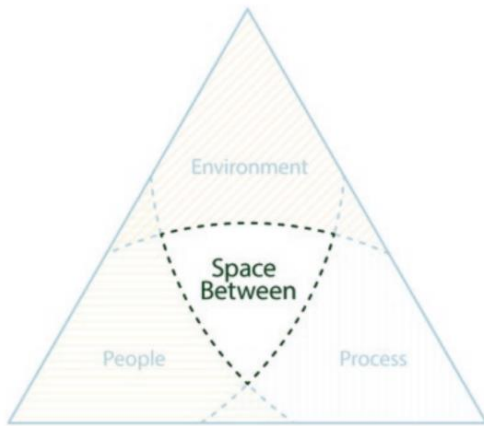


Figure 2.1 The space between (Rill & Hämäläinen, 2018)

According to Rill and Hämäläinen (2018) such a journey is expressed as a movement between the ‘known’ and ‘unknown’ (figure 2.2). The ‘known’ is based on experiences from the past on which expertise is based. The ‘unknown’ is about a potential future to explore. As creativity can be gained by newness, the potential of the ‘unknown’ needs to be explored. Rill and Hämäläinen (2018) explain this journey as an oscillation between expertise (‘known’) and exploration (‘unknown’). This sometimes requires to let go the certainty of expertise. Also, interpersonal skills become important, and leaders need to step away from dominating space to ‘holding space’ for others. Highs and lows are common in such a process, and breakthroughs sometimes need to be forced by breakdowns (Rill & Hämäläinen, 2018).

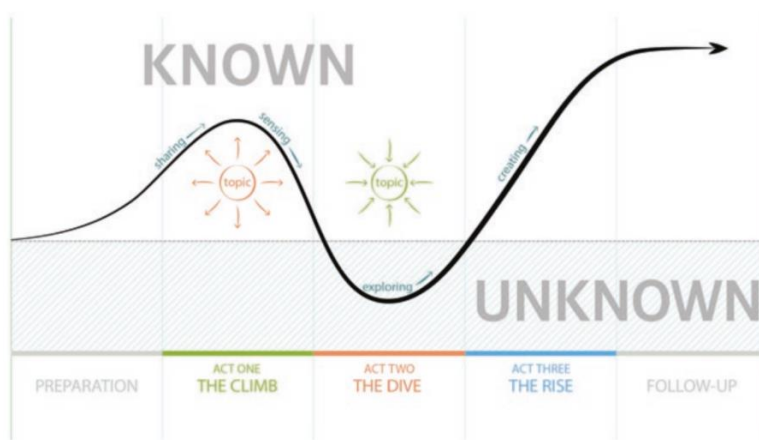


Figure 2.2 The Co-Creative Journey (Rill & Hämäläinen, 2018)

Co-creation is often related to many other terms that denote a similar practice, such as public participation, collaborative governance, civic engagement, or community involvement (Brandsen & Honingh, 2018; Voorberg, et al., 2015). The concept is mostly linked with co-production, with which it is interchangeably used in literature (Voorberg, et al., 2015). Co-production stems from the public sector (see Ostrom, 1996), in which collaboration between public departments and citizens is being studied (Brandsen & Honingh, 2018). According to Brandsen and Honingh (2018) the main difference between the two concepts is that co-production takes mainly place in the implementation phase of a production cycle, whereas co-creation takes place at a more strategic level. This means that in co-creation citizens are involved throughout the planning process, and in co-production they are involved in shaping the service during later phases of the process. According to Voorberg, et al. (2015), citizens as co-creators are related to co-designing and co-producers to co-implementing. Another relatable

concept with co-creation is living-labs as it is known in literature as forms of spatially embedded sites for learning, in which knowledge, products, and technologies are co-created by multiple actors involved (Evans & Karvonen, 2011; Puerari, et al., 2018).

2.1.2 Co-creation and planning theory

A co-creation process has not always been the conventional way to go in planning processes. For a long time, it was assumed that spatial planning should be exercised based on technical, instrumental, and procedural expertise (De Roo, 2007, based on Friedmann, 1987 and Meyerson & Banfield, 1955). This top-down approach stems from nineteenth-century ideals and post-war functionalism. Today, with a society of growing democratic and equitable values, this direction of absolute control is difficult to achieve (De Roo, 2007). It became increasingly more clear that planning is a communicative process, including different actors and interests (Spit & Zoete, 2003), for example with a co-creation process. In literature, a fundamental turn was recognised in the 1990s from a technical rational approach towards a communicative rational approach (see among others Allmendinger, 2017; De Roo, 2007; De Roo, 2010; Healey, 1996).

In practice, according to Zuidema (2016) a technical rationale approach is related to a coordinative model of governance, in which the state decides – using knowledge from specialists – upon the goals that are considered beneficial for the public good. In figure 2.3 (De Roo, 2019) technical rationality is given on one side of the spectrum as an extreme. On the other side is communicative rationality. De Roo (2007) argues that almost all practical issues are in between the two extremes of technical and communicative rationality. Therefore, planning issues cannot be solved solely by one of the two idealistic approaches (De Roo, 2007). Referring to figure 2.3, they can be positioned on the diagonal spectrum, but are unlikely to be in the corners of the figure.

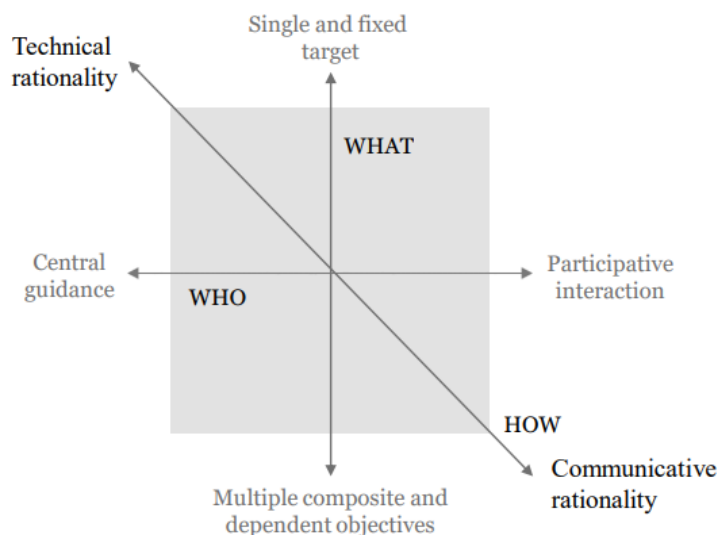


Figure 2.3 Planning Theory model (De Roo, 2019)

Compared to the shift from technical rationality to communicative rationality, a similar shift is noticed in literature regarding public administration types in the Western world: traditional public administration, New Public Management, and New Public Governance. According to Torfing, et al. (2016) there is some overlap between New Public Governance and co-creation as the aim of New Public Governance is to transform the public sector's way of governing from a service provider towards a way in which an arena for co-creation is created (Bovaird & Loeffler, 2012). In Appendix 1 the

planning theory, regarding the shift from technical rationality to communicative rationality and the administration types, is further elaborated.

2.1.3 Phases of co-creation

Different phases can be identified in a co-creation process, with scholars mostly distinguishing 4 to 6 phases (De Koning, et al., 2016). Based on the phases described by Steen and Van Bueren (2017), Rădulescu, et al. (2020) mention four co-creation phases: initiation, plan development, co-creative design, and evaluation.

In literature, the first phase is the **initiation phase** or identification phase (see De Koning, et al., 2016; Rădulescu, et al., 2020; Steen & Van Bueren, 2017). In this phase the problem or idea is being initiated and potential partners are being identified (Steen & Van Bueren, 2017). Consequently, the project can be launched with all stakeholders included (Steen & Van Bueren, 2017). Hereby, the initiator of the process approaches these stakeholders who have a stake or interest in the project, with which engagement is considered necessary (Gouillart & Hallett, 2015; Steen & Van Bueren, 2017). It is also common that extra input sometimes is needed from key information sources or stakeholders outside the creative process (Rill & Hämäläinen, 2018). Such information could be provided by input sessions in which experts can add valuable information to the process (Rill & Hämäläinen, 2018).

The next phase entails the **development of a plan**, in which the process design is determined and in which the roles and responsibilities become clear (Steen & Van Bueren, 2017). Also, a shared vision is developed by the stakeholders in which the different interests, goals, and ambitions are established. In this phase, tasks, activities, and methods should become clear, with the actors knowing what is exactly expected from them in the process. Actors are more likely to stick to their commitments if in this stage awareness is created regarding the commitments made. However, the dynamic nature of the process also calls for flexibility and forgivingness if unexpected circumstances turn up. If commitments are formalized in contracts, stakeholders may feel discouraged to commit (Steen & Van Bueren, 2017). However, contracts can also provide clarity in the relation with different authorities and consultancy firms involved by identifying different roles and responsibilities (Rădulescu, et al., 2020). Furthermore, it is recommended that a management structure is established to guide the process, with a development process manager – or experience designer, facilitator, organizational leader – leading and supporting the process (Rill & Hämäläinen, 2018; Steen & Van Bueren, 2017).

The next step is the **co-creative design phase**, in which solutions are sought for the identified ideas or needs (Steen & Van Bueren, 2017; Russo-Spena & Mele, 2012). Interaction between actors is established by means of co-creation sessions, by which actors can engage in a setting that provides energy, enthusiasm, and productivity (Steen & Van Bueren, 2017). If the sessions have a low threshold character, high rates of attendance are likely to be reached also because they offer a safe environment in which actors feel free to exchange ideas and creativity (Steen & Van Bueren, 2017). The dynamic character of co-creation sessions requires certain qualities of the facilitator, such as awareness, empathy, humility, and trust (Rill & Hämäläinen, 2018). Flexibility is also needed in order to adapt to the energy and needs of the group. This makes co-creation an iterative process with a degree of chaos in it (Rill & Hämäläinen, 2018). In order to get to a result, the role of facilitator is important for introducing the tools and methods of service design that are needed in the process (see Hagman, et al., 2018). The design process can vary between designer-driven, user-driven, or a mix with co-design (Rill & Hämäläinen, 2018). Designing in a co-creation process encourages the group to create a shared base of reference. Consequently, they design based on collective operation and generation of shared knowledge and joint fact finding. Thus, co-creation builds on the collective intelligence of the actors involved, rather than relying solely on the individual performance of assigned experts. By an iterative

process of internal knowledge sharing, collective decision-making, and constructive experimentation, uncertainty can be dealt with (Rill & Hämäläinen, 2018).

The final phase is the **evaluation phase**, in which the generated ideas are evaluated (Russo-Spena & Mele, 2012; Steen & Van Bueren, 2017). Evaluation and monitoring activities need to be specifically formulated and steered by the management of the process (Steen & Van Bueren, 2017). Also, the stakeholders should be part of the evaluation to enrich the perspectives on the process and outcome. As evaluations take place, iterations in the co-creation process are being enabled (Hagman, et al., 2018; Steen & Van Bueren, 2017). Thus, there might appear tensions between the time needed for the co-creation process and the need for quickly making decisions. Therefore, it is important to assess whether changes should be discussed with a wider group of participants (Steen & Van Bueren, 2017). Evaluation tools such as surveys and interviews could help to easily and quickly evaluate the stakeholders' experiences (Steen & Van Bueren, 2017).

2.1.4 Participation

In co-creation processes, and throughout the changing realm of planning and public administrations mentioned in subsection 2.1.2, an increased degree of participation can be distinguished. However, different types of participation are extant in literature. The participation ladder of Arnstein (1969) is widely used to test the extent to which local actors are involved in projects. Eight rungs of citizen participation can be identified in three categories: non-participation, tokenism, and citizen power (figure 2.4). In non-participation, the information flows from the government to the citizens in a top-down, unilateral way. In tokenism, there is more room for citizen participation. Also, information exchange and consultation take place between the government and citizens. In a situation of citizen power, active participation takes place. In such a situation, the government functions as a facilitator of citizen initiatives, in which decision-making sometimes is delegated to the citizens.

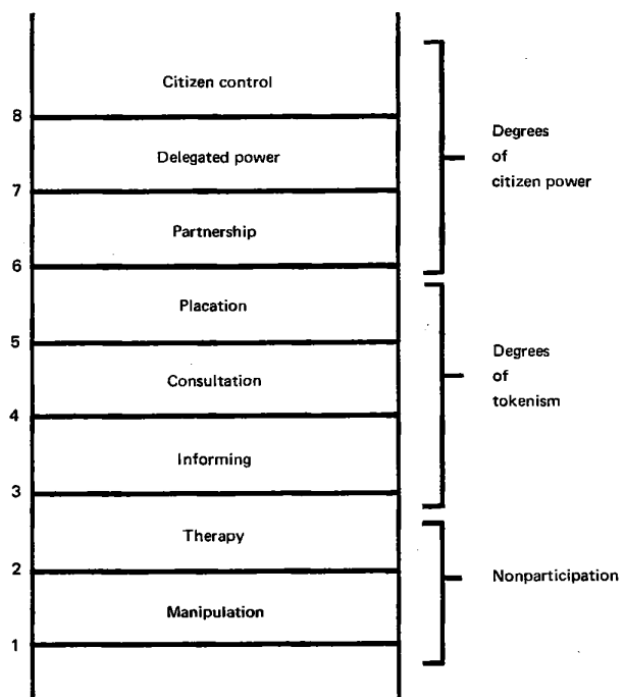


Figure 2.4 Eight Rungs on a Ladder of Citizen Participation (Arnstein, 1969)

Hurlbert and Gupta (2015) propose a split ladder of participation that synthesizes five concepts – problem structuring, social learning, trust, management, and governance – that are necessary for the choice of participatory mechanisms for unstructured policy problems. They explain this ladder as a

diagnostic tool that helps to assess whether participation is likely to work and under what conditions participation is needed (Hurlbert & Gupta, 2015). Furthermore, it posits that stakeholder participation may not quickly lead to consensus outcomes, especially when triple loop learning is needed. Based on the nature of a policy problem and the dynamics surrounding the problem, it can be situated within the split ladder. Consequently, the actors can assess what sort of participation is needed. Beside using the ladder in advance of a project to decide on the type of participation, it also can be used as an evaluative tool to study specific cases. In such an evaluation, it can be assessed how stakeholder participation was developed and whether this type of participation was in line with the nature of the problem and the desired results.

The model by Hurlbert and Gupta is based on Arnstein’s ladder, but splits it at the bottom and at the top (figure 2.5). The bottom half of the ladder indicates low levels of participation and the top half indicates high levels of participation. The four quadrants in this model are varying in the structuredness of the problem, the level of trust, uncertainties about values, science, or knowledge, and different amounts of learning loops. As higher levels of participation are more common in communicative and public governance approaches, quadrant 3 and 4 are applicable to these approaches. These quadrants imply less structured problems and more uncertainty regarding values, science, and knowledge (Hurlbert & Gupta, 2015), which can also be related to an increasing degree of complexity.

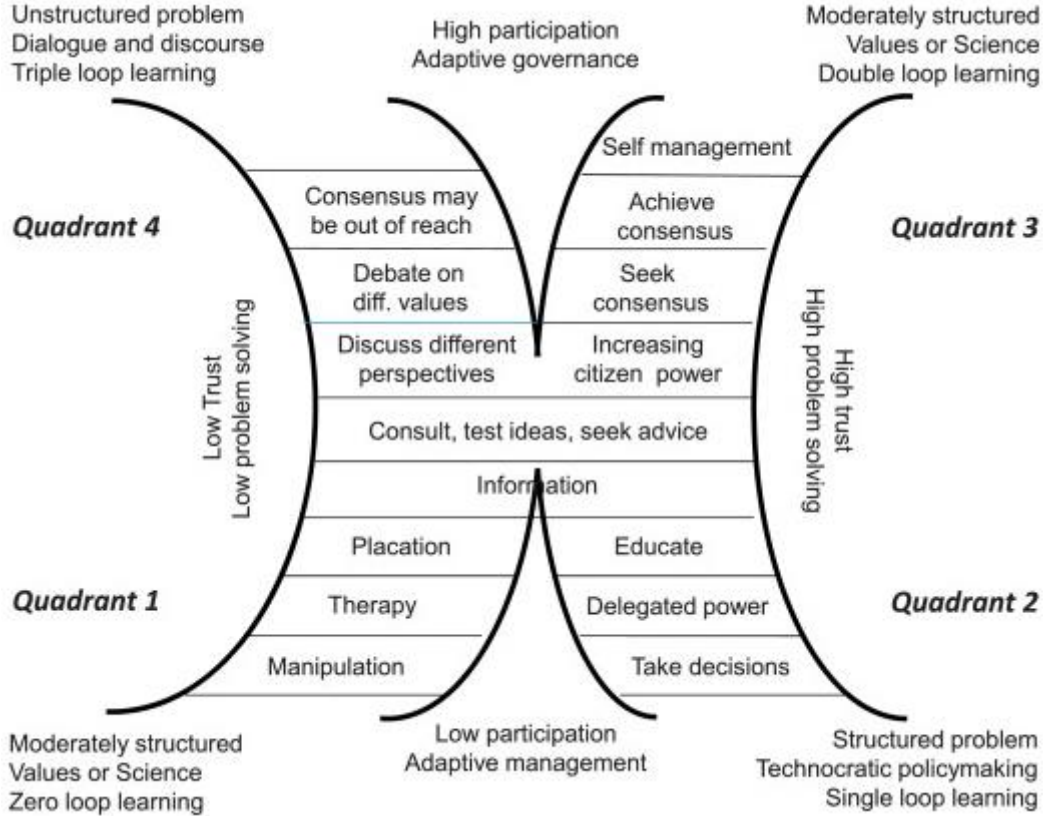


Figure 2.5 The split ladder of participation (Hurlbert & Gupta, 2015)

2.1.5 Formal and informal aspects of co-creation

Managing a co-creation process consists of both formal and informal aspects. Akhilesh (2017) identified five aspects for both the formal and informal aspects. Formal aspects consist of:

- identification of the purpose;
- estimating the required resources;
- allocation of duties and responsibilities;
- formulating the reporting relationships, standardization of the use of the terms; and
- writing contracts.

Informal aspects consist of:

- identification of the right people;
- elaborating the scope and limits of collaboration;
- ensuring the support and commitment of the top management;
- development of appropriate leaderships styles; and
- functions and establishing systems and practices for better resource management.

According to Akhilesh (2017), contracts in co-creation processes are important for: (1) providing support and confidence for information and knowledge exchange, (2) setting up rules for collaboration, and (3) serving as a tool for risk management. The contracts deployed in co-creation need to have clear-cut agreements on for example the relationships among stakeholders, and the interests and roles in the process (Akhilesh, 2017). However, compared to conventional contracts with static and straightforward agreements, co-creative contracts need to be more flexible since the innovation outcome is not clear in advance (Paasi, et al., 2010). A co-creation contract can be an open ended and dynamic negotiation, anticipating internal or external changes during the process. Therefore, trust, commitment, and sense of total partnership are critical. Hence, such a contract needs to be versatile by including both static and flexible elements (Paasi, et al., 2010).

2.1.6 Points of attention in co-creation

While using co-creation, scholars noted that there are some points of attention that need to be taken in consideration:

- The unequal distribution of knowledge, skills, power, expertise, and capacity between the different stakeholders (Hardyman, et al., 2015; Steen, et al., 2018);
- Not all stakeholders may have the skills, expertise, and knowledge to engage in discussions about highly technical problems (see Lasker & Weiss, 2003; Warner, 2006);
- Behavioral barriers in adopting a co-creation approach like risk aversion and resistance to change (Voorberg, et al., 2015), and lack of willingness to participate (Duțu & Diaconu, 2017);
- Tensions between the interest of technical rational producers focusing on stability, efficiency, and quality standards versus the interest of local stakeholders in terms of ideas, knowledge, and resources (Schlappa & Imani, 2018).

2.2 Co-creation and the role of experts and professionals

The points of attention mentioned in subsection 2.1.6 include mainly the unequal distribution and lack of knowledge and expertise. Accordingly, in subsection 2.2.1 the different types of knowledge and expertise are explained. In subsection 2.2.2 the dynamic and changing roles of experts throughout the changing public administration types are explained.

2.2.1 Experts and professionals

In a co-creational setting, actors with different interests contribute in the process by providing input for the production of a good or service (Ostrom, 1996); on one hand residents are involved, and on the other hand public organizations or consultancy bureaus are involved, which Ostrom (1996) describes as 'regular producers'. According to Tuurnas, et al. (2015), the 'regular producer' can be a single professional or a group of professionals in a networked environment. Steen and Tuurnas (2018) use the term 'professional' as a 'regular producer' in a broad sense, not only as what is seen as 'classic' professionals. Yet, they also acknowledge that holding a specific knowledge and expertise, and having a certain degree of autonomy are relevant for actors in providing public services. Expertise is by Mylopoulos and Regehr (2007, p.1163) defined as "the mastery of existing knowledge and techniques in a given domain". The terms 'expert' and 'professional' are used interchangeably in literature, as they both have similar definitions; an expert is in the Oxford Learner's Dictionaries (2021) defined as "a person with special knowledge, skill or training in something" and a professional as someone "having a job which needs special training and a high level of education". According to Christensen (1985) expertise can be highly specialized and almost scientific, but also a generic skill in selecting effective means to reach ends. In the latter, the expert acts as an optimizer and tasks can consist of regulating, scheduling and ordering tasks, programming. Also, an analyst role could be applicable in which the expert chose the best alternative through cost-benefit and cost-effectiveness computations (Christensen, 1985). In the end of this subsection, a table is presented in which the different terminologies of experts, professionals, and the different types of knowledge are distinguished, based on the consulted literature.

According to Thomas (2013), professionals or experts see themselves often as service providers, while they should better act from the perspective of lead partners in service development and delivery. This does not mean that the expert is bypassed, but it means rather a redefinition of the potential roles of expert knowledge, which facilitates debate rather than solely providing answers (Warner, 2006). Moreover, Thomas (2013) argues that public contribution would stimulate effectiveness in service development. To allow good communication during debate and interaction between the professional and non-professional actors, according to Steen and Van Bueren (2017) and Rill and Hämäläinen (2018) it is important to use context-specific language and to carefully consider the choice of words by minimizing the use of jargon.

Woodhouse and Nieuwsma (1997) discern two types of expertise: the simple theory and its converse, the cynical theory. The simple theory of expertise is about operating in an unproblematical way. As such, tasks are straightforward and the labor is divided properly between experts and government officials. In the United States, especially before the 1960s, this approach was more plausible, but since then plausibility, legitimacy, and the optimistic view about expertise decreased. Illustrative examples are the NIMBY controversies, the general dissappointments, and increasing stresses of life in the late-twentieth century (Koehn, 1995; Woodhouse & Nieuwsma, 1997). Conversely, the cynical theory is about disagreement between experts, in which experts tend to align to their client's or organization's stance. In such a situation there is distrust in statistics and a belief that expertise only serves the affluent and powerful as they are in a position to buy the most convenient expertise (Woodhouse &

Nieusma, 1997). In order to operate between these two extremes, Woodhouse and Nieusma (1997) proposed three conditions to sketch a more sophisticated situation in which expertise can be useful:

- users of expertise and services should make value judgments rather than the experts themselves;
- disagreements are inevitable and can invigorate the political debate, but should not ruin the utility of expertise; and
- targeting expertise toward the reduction of uncertainties turns out to be questionable in complex endeavors, since it is hard to narrow uncertainties sufficiently or in a timely way.

In another chapter Woodhouse and Nieusma (2001) argue for democratic expertise, in the sense that that expertise is turned toward the service of democratic problem solving. Then, knowledge claims can be better assessed and negotiated by the participants, conflicting values can be better mediated, and fair collective problem solving can be stimulated (Woodhouse & Nieusma, 2001).

In decision-making processes, three types of knowledge are identified by Edelenbos, et al. (2011) and Hunt and Shackley (1999): expert knowledge, bureaucratic knowledge, and stakeholder knowledge. In expert knowledge the focus is mainly on technical expertise, usually independent of the government (Van Buuren & Edelenbos, 2004). Bureaucratic knowledge is strongly connected to administrative and governmental practices, as it focuses on stressing the political and strategic use of knowledge (Edelenbos, et al., 2011). Stakeholder knowledge is developed by experiences of stakeholders, related to context or location (Edelenbos, et al., 2011; Eshuis & Stuiver, 2005). In table 2.1 the three types are shortly summarized (Edelenbos, et al., 2011). Despite co-creation being assumed as a communicative process in which all participants have equal influence, participants might not want to be involved in all decisions (Steen & Van Bueren, 2017). For example, stakeholders may not want to participate in deciding on technicalities in decision-making. Instead, a team of experts can decide on these technicalities before feeding them back to the group to discuss the outcomes (Steen & Van Bueren, 2017).

Table 2.1 Overview of the differences between expert, bureaucratic and stakeholder knowledge (Edelenbos, et al., 2011)

	Expert knowledge	Bureaucratic knowledge	Stakeholder knowledge
Norm for knowledge production	Scientific validity	Policy usefulness	Social validity
Warrant for useful knowledge	Positive peer review and prospects for publication	Appropriateness with regard to standards and warrants of bureaucracy, and political use	Level of fit with the business, local experiences and interests
Core business	Scientific research: systematic and objectified observations	Rule-following behaviour: bureaucratic practices	Daily life, private business, defending certain societal interests
Criteria for success	Validating scientific hypotheses; expanding the knowledge domain	Political-administrative support for proposals	Support for one's own interests and agenda

While the terms of 'expert' and 'professional' are used interchangeably in literature, there are some distinctions to be made. Thomas (2013) used both terms as providers of service for the public, but Van Buuren and Edelenbos (2004) explain the knowledge provided by experts as independent of the government. Relating to the definition by Ostrom (1996), professionals refer to the 'regular producers' in co-creation processes and 'experts' refer to the people who have a specific expertise and are often part of consultancy firms. Beside 'regular producers', Ostrom (1996) distinguishes 'local stakeholders' as the other main category of actors in co-creation processes, often represented by local interest groups or residents. These local actors are in literature also seen as experts themselves (Steen & Tuurnas, 2018). Local knowledge is sometimes also referred to as experiential knowledge in which communities use their experience and knowledge in co-creative and decision-making processes (Fleming & Rhodes, 2018; Schaefer, et al., 2021). Each of these actors bring a specific type of knowledge into the process, in which Edelenbos, et al. (2011) and Hunt and Shackley (1999) make the distinction between expert knowledge, bureaucratic knowledge, and stakeholder knowledge. To structure the

different terminologies of actors and knowledge used in this chapter, in table 2.2 a summary is given. Regarding the different types of knowledge, in literature the debate is often on science versus experience (Fleming & Rhodes, 2018). However, in co-creation the combination between science and experience is often sought by combining expert knowledge and local knowledge (Cottam & Leadbeater, 2004). In this research the focus falls on these two variables by examining the interaction between local stakeholders and the consultancy firms’ experts.

Table 2.2 Summary of actors, terminologies, and types of knowledge

Groups in co-creation processes	Actors	Knowledge
Regular producers (professionals)	Governmental organizations	Bureaucratic knowledge
	Consultancy firms (experts)	Expert knowledge
Local stakeholders (non-professionals)	Residents and local interest groups	Local knowledge

2.2.2 Changing role of regular producers

Both consultancy firm experts and governmental organization professionals have faced an increasing amount of projects in which the focus was more on communicating and collaborating, rather than solely providing technical knowledge in a top-down manner, as was explained in previous sections (see Brandsen & Honingh, 2013; Steen & Tuurnas, 2018; Torfing, et al., 2016). Hence, knowledge and input of local actors has gained importance as these local service users can for example be involved in judging values (Woodhouse & Nieuwsma, 1997). In order to frame these different roles of ‘regular producers’, Steen and Tuurnas (2018) related the changing role of professionals to the different modes of public administration. According to Pestoff (2018) each type of administration – Traditional Public Administration, New Public Management, and New Public Governance (Osborne, 2006) – implies different perspectives on the role of professionals in guaranteeing service quality. Osborne (2006, p.378) defined a key element of Traditional Public Administration as “the hegemony of the professional in the service delivery system”. In the bureaucratic environment, professionals relied on their expertise and knowledge with which they provided the service quality (Sehested, 2002). In this administration type, there is little room for collaboration with service-users to enable them to provide input (Steen & Tuurnas, 2018).

In New Public Management more emphasis is put on the use of markets, competitions, and contracts in delivering public services (Osborne, 2006). Professionals are no longer the only actors to deal with questions and means; the overall quality of the service has gained importance over the individual capacity and knowledge with which professionals judge the questions and means (Brandsen & Honingh, 2013).

In New Public Governance different networks of actors are present and knowledge is dispersed among the involved parties (Steen & Tuurnas, 2018). The interaction between the actors within complex and dynamic arenas causes the professional’s position and nature of the task, with its objectives and standards, to become contested (Brandsen & Honingh, 2013; Noordegraaf, 2007). Steen and Tuurnas (2018) recognize that in literature, co-creation is generally linked with New Public Governance. Herein, professionals cooperate with service users in order to develop the services (Fledderus, 2016). When working with the local community, professionals are forced to work in new structures and processes (Taylor & Kelly, 2006). In table 2.3 the changing role of professionals in the different administrative

modes are summarized (Brandsen & Honingh, 2013). According to Brandsen and Honingh (2013) and Steen and Tuurnas (2018) the position of professionals and their expert knowledge changed throughout the different regimes, as collaboration skills have gained importance instead of one-directional top-down relationships.

Table 2.3 Professionals and three subsequent types of governance (Brandsen & Honingh, 2013)

TABLE 1
Professionals and Three Subsequent Types of Governance

	CPA	NPM	NPG
Expertise	Mystical knowledge	Rationalized knowledge	Dispersed knowledge
Community	Dominant professional community	Dominant organizational community	Dominant inter-organizational community
Basis of legitimacy	Professional standards	Organizational output and professional standards	Organizational output and professional standards and inter-organizational and communication skills
Autonomy	Structured by professional community	Contested within professional bureaucracy	Contested within collaborative network

2.3 Wrapping up theoretical insights

Based on this chapter’s information, the secondary research questions 1-3 are largely answered. These questions are:

1. *What is co-creation and does this concept fit theoretically with the Hegewarren project?*
2. *Which interests are at stake in the Hegewarren and how do these connect to theory on co-creation?*
3. *What is the role of expert knowledge in a co-creation process, and what determines effectivity?*

2.3.1 Co-creation and the Hegewarren project

Multiple definitions of co-creation were given in subsection 2.1.1. To summarize the multiple definitions, co-creation implies a collaborative and creative effort undertaken collectively by a variety of actors, in which a product or idea is developed, and for which exact requirements are not defined in advance. In the Hegewarren project, the collaborative and creative effort is reflected in the workshops. These workshops allow for communication as the different actors have the possibility to express their interests and opinions. Creativity is allowed for by collectively designing the variants with no strict design requirements. The idea or product to be developed can be connected to the designs which are being made for the Hegewarren polder. Although multiple goals are given for the design process, the exact requirements for the future design are open and left to discussion. Thus, the requirements are not defined in advance, allowing room for flexibility.

Referring to the phases in subsection 2.1.3, the Hegewarren project currently is in the co-creative design phase, with the evaluative phase to follow thereafter. Prior to this phase, the initiation phase and plan development phase took place. As was explained in chapter 1, the Provincial Council decided to start exploring future visions of the Hegewarren. In the theoretical phases explained in this section, the other stakeholders then are to be invited in the process to together develop the plan with roles and responsibilities. Instead, in the Hegewarren project, the Province of Fryslân, Wetterskip Fryslân (waterboard), and the Municipality of Smallerland then were assigned as initiating parties of the co-creation process. The project goals that were set by these parties are mainly based on these parties’ positions as they include: reducing emissions, lowering water system costs, reducing desiccation of the nature area, contributing to a more robust water system. Some goals can benefit the residents and interest groups – regarding recreation, prosperity, and spatial quality – but it is evident that the goals

were set by the initiating parties. The management structure was established in the plan development phase, as Open Kaart was assigned and procured as facilitator of the process. Also, a procurement took place in which the consultancy firms – H+N+S and RHDHV – became involved in the project. After the direction became clear, the co-creation team was established including the initiating parties, the consultancy firms, and the other stakeholders; inhabitants, neighbors, and inter-regional interests (see chapter 1). In the first meeting the project goals were announced, and the process was communicated within the co-creation team. In the following weeks the co-creative workshops took place, bringing the project in the next phase. In these workshops, everyone involved in the co-creation team was able to interact and bring forth ideas. In chapter 5 this co-creative design phase is further analyzed, based on observations and interviews.

Bertolini and Spit (2005) developed a planning triangle in order to structure spatial projects. This analytical tool consists of three components; object, process, and context (figure 2.6). 'Object' is about the content of the issue. 'Process' consists of the different actors and resources, and it gives insight in the organization. 'Context' is about the conditions with which object and process have to deal. By means of these three components, variables can be categorized in object variables, process variables, and context variables (Spit & Zoete, 2003).

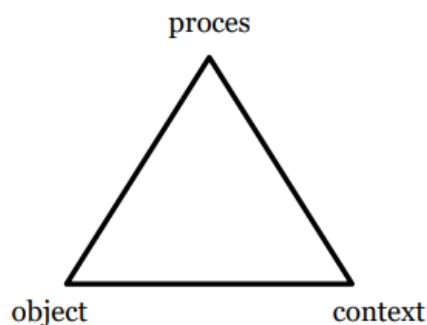


Figure 2.6 Self-created, based on Spit and Zoete (2003)

In the Hegewarren the 'object' – the 'what' – can be regarded as the geographical area where the intervention takes place; the Hegewarren polder. The 'process' – the 'who' and 'how' – can be related to the co-creation process in which different actors and interests are represented. The problems regarding peat meadows – emission of CO₂, peat oxidation, and soil subsidence – can be seen as 'context' variables. These 'who', 'what', and 'how' questions also are illustrated in the spectrum by De Roo (Figure 2.3). The 'who' applies to the different actors in the in the Hegewarren project. In the project there is room for interaction between the different actors by the co-creative workshops. Therefore, this implies a form of interaction rather than central guidance. The 'what' consists of the multiple objectives that are given in the project (see subsection 1.1.5), and 'how' to the co-creation approach chosen in this project. Consequently, the project can globally be positioned in the bottom right corner of the spectrum (see figure 2.7).

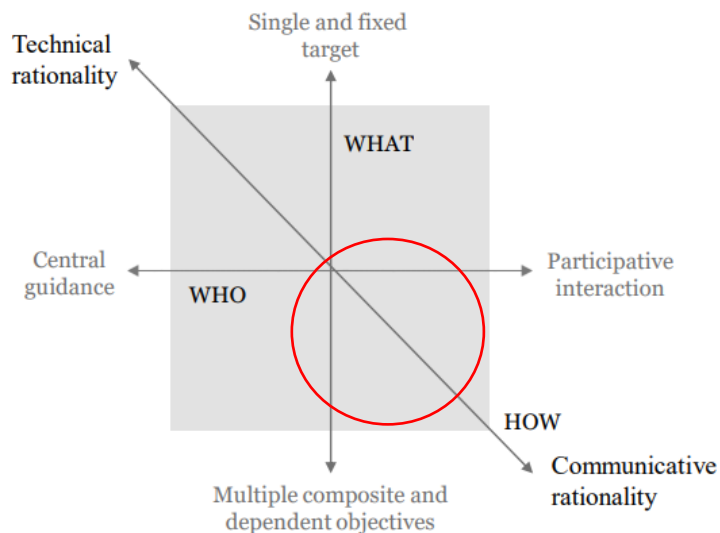


Figure 2.7 Modification of the Planning Theory model by De Roo (2019)

2.3.2 Interests in the Hegewarren project

Various actors are participating in the project (see subsection 1.1.4) by sharing and discoursing their interests in the co-creative workshops. Also, local stakeholders bring local knowledge to the project, as they live in the area or are familiar with the area. To connect this participation to the ladder by Arnstein (1969) (Figure 2.4), the rung of partnership is most applicable to the Hegewarren project. In the partnership rung, power is distributed by the negotiation process between powerholders and citizens (Arnstein, 1969). In the Hegewarren project this partnership is present as the client and governmental organizations are the powerholders, negotiating with the local stakeholders. On the ladder by Arnstein, the project can thus be placed in the upper part of the ladder. Similarly, the project can also be categorized in quadrant 3 or 4 in the upper part of Hurlbert and Gupta's split ladder of participation (2015) (Figure 2.5). In this, participation is relatively high, but the level of problem solving is not yet known as measurements of CO₂ reduction and soil subsidence need to be monitored after implementation of the future design.

2.3.3 Roles of the expert

The expected roles of experts in co-creation processes according to some scholars are explained in section 2.2. Summarizing this section, according to Thomas (2013) and Tuurnas, et al. (2015) the role of experts in co-creation processes mainly consists of providing service and acting as a lead partner. As such, experts are expected to develop services in cooperation with service users (Fledderus, 2016). This means that collaboration has gained importance instead of technical and top-down relationships (Brandsen & Honingh, 2013; Steen & Tuurnas, 2018).

2.4 Conceptual model

Conceptual modelling entails formally describing aspects of the physical and social world around us for purposes of understanding and communication (Mylopoulos, 1992). In figure 2.8, concepts from both the physical and social world, which arose from this chapter, are visually modeled. What Ostrom (1996) defines as 'regular producers' in co-creation is in the model referred to as the 'professional actors', as also Tuurnas, et al. (2015) mention the regular producers to be professionals working in a networked environment. Local actors are seen as 'non-professional actors', as they are not professionally involved in the project, but rather without obligation in which they are able to provide their expertise. Interaction between these groups of actors is the essential part of co-creation which is in line with the

definitions by Cottam and Leadbeater (2004) and Rill and Hämäläinen (2018). Concludingly, the presence of, and interaction between the professional actors and non-professional actors forms a substantial part of co-creation.

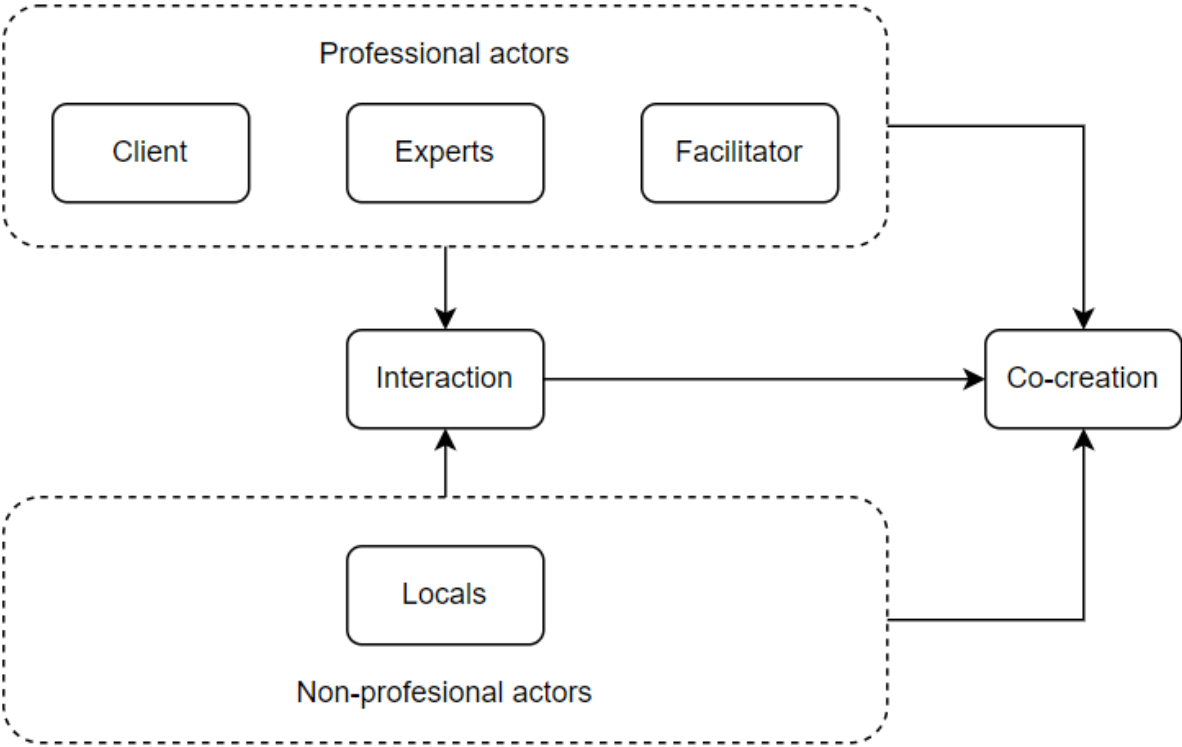


Figure 2.8 Conceptual model

3 Methodology

In this chapter, the methods employed in this research are elaborated upon. In section 3.1, the research strategy is shown. Thereafter in section 3.2, the theoretical background of case study research is connected with the Hegewarren project. The data collection methods are outlined in section 3.3. In section 3.4 the consent form is explained. The chapter ends with an explanation of the data analysis and a summary of the research design. The first three secondary research questions were largely answered in section 2.3. Though, the methods used for these data are included in this chapter. The methods relied upon for answering the final three secondary questions are also included in this chapter, with corresponding data and results forthcoming in chapter 4 and 5.

3.1 Research strategy

In order to answer to the main research question, a qualitative approach is used as it focuses on quality, depth, richness, and understanding (Clifford, et al., 2010). Based on Sayer (1992), Clifford, et al. (2010) discern two types of research designs: intensive and extensive. In an intensive research design, the emphasis is on describing a single case, or a small number of cases (ibid). Also, qualitative methods are usually deployed in intensive research in order to answer ‘how, what, and why’ questions (ibid). In this thesis, an intensive research design is used as qualitative methods will be deployed to answer the main research question – that begins with ‘how’. Furthermore, the focus is on empirics by means of a case study, which is further explained in section 3.2.

3.2 Single case study

According to Tight (2017), a case study involves studying a particular case or a number of cases. Furthermore, he argues that the case will be complex and bounded, studied in its context, and that the analysis undertaken will seek to be holistic. In literature it is argued that one cannot generalize from a case study, but according to Flyvbjerg (2006) this statement is not true; case studies can serve as an example and can be valuable for scientific development. A case may be so important or interesting that it deserves study in its own right (Punch, 2014). The intention is thus not to generalize based on a case study, but rather to understand the case in its complexity, entirety, and context (ibid). As the Hegewarren is a unique project and needs to be studied in its entirety and in its context, lessons could be learned from this case without the intention to generalize based on this case.

To determine the type of case study, Tight (2017) suggests three factors to be considered; (1) focusing on a single case or involve a comparative study of two or more cases, (2) confining the case(s) to description or engage with theory, (3) intending primarily to support teaching or research. In this research, the Hegewarren is considered as the case being studied. Concerning the factors determining the type of case study, it first of all is a single case study. There are more projects running in the Province of Fryslân regarding soil subsidence due to peat oxidation, but not in the way this project is organized. Therefore, this research solely focuses on this specific project. Secondly, the research both confines to description and engages with theory. As the case is a real-life project, there are always descriptive elements in it. Also, theories are used to see the project through a theoretical lens. Thirdly, the research intends to both support research and teaching. Because of the research gap mentioned in chapter 1.2, the thesis intends to support research. On the project level the case study includes some learning elements when seeing it as an exploratory or exemplary project for the Province of Fryslân. Therefore, lessons from this study could be useful for future projects.

Regarding the definition by Tight (2017), the case is both complex – by having varying interests, ideas, objectives in the process – and bounded with reality – as the case entails a real-life project. Accordingly, the case is being studied in its context, with the real-life conditions surrounding the project being taken into account. The third component of the definition entails aiming to analyse the case holistically. As

much as possible of the project is being studied in the given research time, aiming for studying the entirety of the case. By using different research methods aiming to analyse the projects from multiple perspectives, the research can be considered holistic.

3.3 Data collection methods

Different research methods have been used in order to collect the data in this research. Internet research and document analysis resulted in secondary data, whereas action research, observations, and in-depth, semi-structured interviews resulted in primary data.

3.3.1 Internet research and document analysis

In order to identify the concept of co-creation and the role of expert knowledge in it, literature was searched for and studied online. Different online databases and search engines were used, like Elsevier Scopus and Google Scholar.

To engage with the Hegewarren project, several documents have been studied. This is also known as documentary analysis, in which the materials – written, oral, virtual, visual – are used as a source for research (Tight, 2019). Five main sub-designs or genres can be recognized in document analysis: literature reviews, systematic reviews and meta-analyses, secondary data analysis, archival and historical research, and policy research. In this research, secondary data analysis and policy research have taken place (Tight, 2019). In chapter 1 the case was explained based on several documents, which were referred to in-text. The documents were retrieved from the internet by searching for the Dutch translation of terms like “peatlands Fryslân”, “Hegewarren”, and “environmental vision Fryslân”. Additionally, the information from Toekomst Hegewarren, Provincie Fryslân, and Wetterskip Fryslân were used in this secondary data analysis. Thus, this material contained information from both websites and policy documents, and this information was used to prepare the primary data collection by interviews. The categories of document analysis are often used interchangeably (Tight, 2019). In this research, the categories are also overlapping as it can be argued that a report from the Province of Fryslân can be both considered as secondary data and as a policy document. Also, the former paragraph about searching literature can be interpreted as the categories of systematic analysis and literature review.

3.3.2 Action research and observations

As the research is carried out during an internship, insider action research is enabled. This offers a unique perspective on systems because it is from the inside (Coghlan & Brydon-Miller, 2014). As such, action research brings together the acting and the researching (Punch, 2014).

Non-participant observations were undertaken as the co-creative sessions were watched. In these observations the researcher-as-observer was not a participant of the process, and therefore stayed outside the process (Handley, 2011). The data from these sessions can be categorized as naturally occurring data, as the sessions occurred naturally – they would be there even if the researcher did not exist – and became data when they were captured by the researcher for the purpose of research in audio, video, or text form (Lester & O'Reilly, 2019). The co-creative sessions all have been organized online via Zoom. In table 3.1 the different group meetings are shown.

Table 3.1 Digital group meetings

Date	Session	Content
10 November 2020	Information session	Explaining the process
19 November 2020	Workshop 1	Getting to know each other and exchanging first ideas
10 December 2020	Workshop 2	Providing information on possible future functions and first co-designing of variants in break-out rooms
18 January 2021	College tour	Inspiring sessions on business models, wet cultivation, and safety on the water
21 January 2021	Workshop 3	Experts showed designs and expert judgements on the designs
8 February 2021	Continuation workshop 3	Remarks and questions on designs from workshop 3
25 February 2021	Workshop 4	Updated designs were explained, and the group was divided into two break-out rooms to co-design shipping route
1 March 2021	College tour	Inspiring sessions on nature development, carbon credit schemes, and recreation
29 April 2021	Workshop 5	Updated designs were explained
18 May 2021	Thematic sessions	Three thematic sessions were presented on possible future functions of the area: recreation, water management, and safety on the water
27 May 2021	Workshop 6	Questions on designs and discussions in break-out rooms to rank designs by stakeholder groups

3.3.3 Interviews

In order to answer secondary research question six, in-depth, semi-structured interviews were held, which also provided valuable data for the other research questions. In semi-structured interviews an interview guide is employed with questions that focus on the content of the research. Although the questions are ordered, the interviewer must be flexible in this type of interviews (Dunn, 2005). Semi-structured questions are planned in advance, and they tend to be open-ended questions such as why, what, who, where, or even less structured (Olsen, 2012).

Information about the interviews and the interviewees is listed in table 3.2. Next to the client, consultancy firms, facilitator, and advisory commission, the aim was to also invite interviewees from the different non-professional interests present in the project. Interviews were scheduled pragmatically based on interviewees' availability. First, a representative of the facilitators of the workshops was interviewed. Then, the project manager from the Province of Fryslân was interviewed. Then, the experts from Royal HaskoningDHV, H+N+S, the advisory commission, and the project manager representing the consultancy firms were interviewed. Eventually, the resident, and the

representatives of farmers, the nature area, and the neighboring village were interviewed. In accordance with the client, it was considered better to interview them after the final workshop to not bother them with an interview while the series of workshops was still running.

The interviews took place during May and June 2021 in the language preferred by the interviewee; either Dutch or Frisian. All interviewees were held online due to the Covid-19 restrictions, except from the interviewee with the resident which took place in the resident's garden. The interviews had a duration between 40 and 70 minutes and they were audio recorded based on the interviewees consent.

The interview guides are created based on codes, stemming from the information from chapter 1 and theories and concepts from chapter 2. Opposed to inductive – generating understandings from the data themselves – this pre-set of codes was developed deductively, where codes are drafted from the theory (Clifford, et al., 2010). However, also inductive coding was used as additional codes were derived from the interviews that were initially not drawn from the theory. According to Campbell, et al., (2013) and Tashakkori and Teddlie (1998) combining both deductive and inductive coding might be more fruitful as it results in a more complete set of codes. Also the document analysis and observations were used to develop the interview questions. The interview guides can be found in Appendix 2 and the codes in Appendix 3.

Table 3.2 Interviewees

Participant	Function interviewee	Date
1	Facilitator of the process (Open Kaart)	17-5-2021
2	H+N+S	19-5-2021
3	RHDHV	19-5-2021
4	Advisory commission living labs	20-5-2021
5	Project manager of the Province of Fryslân (client)	21-5-2021
6	Project manager representing the consultancy firms	25-5-2021
7	Representative of farmers	9-6-2021
8	Representative nature area	10-6-2021
9	Representative neighbor village	11-6-2021
10	Resident	11-6-2021

3.4 Ethics

According to Longhurst (2016), two ethical issues are important: confidentiality and anonymity. These two aspects are taken into account by using a consent form (Appendix 4). Furthermore, interviewees have the right to:

- decline to answer any particular question;
- ask for the audio-recorder to be turned off at any time;
- end the interview at any time;
- withdraw from the study up until three weeks after participating in the research;
- ask any questions about the study at any time during participation; and
- ask for the erasure of any materials that are not wished to be used in any reports of this study.

The interviewees' identities are not be mentioned in the report, although the reader can always get an impression of the interviewees' backgrounds. The interviews were recorded, and quotes have been

used within the report. Also, interviewees were asked if they would like to receive a copy of the transcription, and those that indicated so have been provided with one.

3.5 Data analysis

The case study documents are used as a basis for understanding the case, and to formulate the interview questions. The documents are analyzed based on the codes (Appendix 3). In this way, the policy directions are discovered regarding the theoretical framework of this study. From the documents, information regarding planning approaches, experts and different types of knowledge, and interests in peatland areas was retrieved.

The digital workshops are also analyzed by using the codes (Appendix 3). Hence, the content of the workshops was checked on congruency with the codes drafted from theory. In this way, answers to secondary research questions 4-6 are found.

The in-depth, semi-structured interviews were recorded and transcribed before they were analyzed by using ATLAS.ti. By using this software program, transcripts were analyzed by labeling pieces of text according to the codes from Appendix 3. Then, the code groups were used to structure the results from this primary data analysis. The data from the interviews were used to answer the secondary research questions – mainly secondary research question 6. Furthermore, the interview results were compared with the other data sources, so that data triangulation was enabled. Also, regular meetings with supervisors and collaboration with a PhD-candidate contributed to consciously and properly doing research. In table 3.1 this research's design is summarized.

Table 3.3 Summary of the research design

Secondary question	Information	Data collection method	Documentation method	Method of analysis	Moment of data collection
1. What is co-creation (1) and does this concept fit theoretically with the Hegewarren project (2)?	Literature concerning co-creation (1) and documents of the Hegewarren project (2)	Literature research by using online sources (1) and document research (2)	Writing chapter 1 en 2		January-March
2. Which interests are at stake in the Hegewarren and how does this connect to the theoretical framework?	Documents of the Hegewarren project and the theory and experiences by actors involved	Document research, literature research, and semi-structured interviews	Writing chapter 1 en 2		February-March
3. What is the role of expert knowledge in a co-creation process, and what determines effectivity?	Literature on expert knowledge in communicative processes and experiences by actors involved	Literature research by using online sources, document research, and semi-structured interviews	Writing chapter 2		February-March
4. Who are the experts in the Hegewarren project, what do they do, and how do they do this?	De role of experts in the process and experiences by actors involved	Action research during the digital workshops and semi-structured interviews	Writing chapter 5	Video-analysis of the digital workshops with codes, and transcribing and coding in ATLAS.ti	Throughout the project
5. How takes communication place between experts and the other actors in the co-creation process?	Role of experts during the workshops and experiences by actors involved	Action research during the digital workshops and semi-structured interviews	Writing chapter 5	Video-analysis of the digital workshops with codes, and transcribing and coding in ATLAS.ti	Throughout the project
6. How do the different actors experience the co-creation process?	Experiences by the actors involved	Action research during the digital workshops and semi-structured interviews	Transcriptions and results in chapter 5	Video-analysis of the digital workshops with codes, and transcribing and coding in ATLAS.ti	May-June

4 Case study documents

In this chapter, documents related to the case are analyzed. These documents are policy documents on the provincial level and documents specifically related to the Hegewarren area. The documents are analyzed by reading and searching for information relating to this thesis's theoretical framework. The documents also served as background information for the interviews.

4.1 Omgevingsvisie Fryslân

In the Omgevingsvisie the Province of Fryslân considers both collaboration per se, and collaboration to accomplish ambitions to be very important. The Province is open to new collaborative forms and decentralized tasks for inhabitants, enterprises, and organizations. Regarding important issues, the province aims to bring parties together and to provide and support these parties with knowledge and other resources. Furthermore, they aim for integrated area approaches in which flexibility and experimentation space is considered important while 'puzzling' together in the living environment. In line with the noticed changes in planning approaches and public administration types, the Province stated the following: *"In the changing societal relationships more emphasis is on the participating and network roles, instead of the classic roles of performing and lawful government. We therefore will choose more to communicate, facilitate, and stimulate, than regulate and realize ourselves (while these roles also remain)"* (Provincie Fryslân, p. 38, 2020). As such, the Province takes a flexible and steering position in which they coordinate initiatives, provide resources, and make process requirements. These principles help to make integral choices without having set the goals prior to a project, leaving some space and flexibility to be tailored to different projects. However, the Province still has to make political and administrative decisions which are based on the goals to be achieved and the financial feasibility.

Different interests are at play in the Hegewarren, which are all represented in the co-creation team mentioned in chapter 1. These interests are in line with those mentioned in the Omgevingsvisie, in which the peatlands are described as areas in which multiple issues and interests come together: landscape and nature values of peatland with the main problem of soil subsidence and consequently increasing emissions of CO₂, the agricultural interests with the sector traditionally being an important economical and scenic factor, inhabitants who need to cope with soil subsidence affecting their dwellings and gardens, and recreational interests with both tourists and businesses and facilities attracting these tourists.

The objective of creating a variant in which a potential shipping route to the village of Drachten is mapped, can be fitted in the Omgevingsvisie as the Province aims for an increase in water freight transport. This goal is based on the assumption that the shipping network is desirable for companies that depend on it, and that this type of transport is relatively environmentally friendly. Other objectives in the Omgevingsvisie that are relatable to the Hegewarren project are: making the agricultural sector more sustainable, protecting nature areas with maintenance plans, reducing emissions, and making the water systems future proof. Furthermore, three specific objectives are mentioned regarding peatland areas that are to be accomplished in 2030: reducing CO₂ emissions in peatland areas, reducing further deterioration of dwellings due to soil subsidence, and completing tens of successful examples in which new agricultural solutions are found. The objectives of the Hegewarren project are in line with these objectives, although the deterioration of dwellings is not explicitly mentioned in the Hegewarren's objectives. Further, integrality, customization, and collaboration are mentioned as important pillars in the approach for peatland areas in the coming years, which will be further explained in the Veenweideprogramma 2021-2030.

4.2 Veenweideprogramma 2021-2030

The Veenweideprogramma 2021-2030 focuses on six components (see table 4.1). In this document, the objectives for 2030 are more specific than the objectives mentioned in the Omgevingsvisie. The soil subsidence needs to be reduced with 0.2 centimeters on average per year, the emissions of greenhouse gasses needs to be reduced with 0.4 megaton CO₂ equivalents per year, a sustainable future vision regarding nature inclusive and circular agriculture needs to be developed, and the water system needs to be made more climate adaptive to be able to withstand weather extremes (Provincie Fryslân and Wetterskip Fryslân, 2021).

Table 4.1 Components in Veenweideprogramma 2021-2030 (Provincie Fryslân and Wetterskip Fryslân, 2021)

Water management and climate adaptation
Soil and land use
Agriculture
Living environment, nature, and biodiversity
Integral area-based approaches
Research and monitoring

The strategy mentioned in the program focuses on a step-by-step and bottom-up approach in collaboration with 'area committees' in which a wide range of actors are involved with equivalent roles. These actors range from inhabitants, entrepreneurs, governmental organizations, and NGOs. The Hegewarren project includes such an 'area committee', as a co-creation team is present with these actors involved. The peatland issues are considered as complex and many uncertainties are expected by the Provincie Fryslân and Wetterskip Fryslân. Hence, they aim to be dynamic in their approach by having two calibration moments in 2022 and 2026 in which the approach can be altered.

The research and monitoring component includes gathering of knowledge by both practical experiments and theoretical modelling of developments. In this, knowledge on how to reach the goals in the most effective way is necessary for the areas that need to be redesigned in the future.

4.3 Voorverkenning Kansrijkheid van een integrale gebiedsontwikkeling Hegewarren

This document includes the outcomes of a pre-exploration based on the request of the Provincial Council to investigate the possibility of developing an integral area-based approach in the Hegewarren (Provincie Fryslân, 2019). This investigation was executed by a core team of officials from the Province of Fryslân, Wetterskip Fryslân, the municipalities of Leeuwarden and Smallerland, and a representative of the livestock farmers in the Hegewarren. Inhabitants, NGOs, and other actors with an interest in the area were consulted by sending questionnaires and organizing walk-in meetings in which interests were shared. Based on these consultations and background information of the core team, three different schools of thought were developed: an autonomous situation in which current land-use is maintained, extensive and innovative agriculture in which groundwater levels are heightened, and a climate robust and future proof area in which agriculture becomes obsolete and the area serves as water retention area.

Based on this pre-exploration an integral area-based approach was considered as a potentially feasible option to solve the problems in the Hegewarren. Also, the actors in the area are open towards an area-based approach, especially regarding opportunities for recreation. One of these actors are the livestock farmers, who would like to have clarity as soon as possible in order to determine their future options. If the current land-use cannot be maintained for the coming 30 years, they are willing to collectively move away from the area. According to them, extensification of the agriculture with higher groundwater levels is not feasible in the Hegewarren. Regarding heightening the groundwater levels,

it is expected that emissions of CO₂ and nitrogen will reduce, costs of the water system will decrease, and desiccation of De Alde Feanen will reduce. Furthermore, it possibly contributes to the objective of Wetterskip Fryslân to increase the surface water volume and retention areas. Other objectives are increasing biodiversity in De Alde Feanen, designing a shipping route to Drachten, amplifying the recreational facilities, and exploring possibilities for generating renewable energy.

4.4 Startnotitie gebiedsontwikkeling de Hegewarren

Based on the pre-exploration the Provincial Council concluded that an area development is promising and favorable (Provincie Fryslân, 2019). Then, the project moved to the exploratory phase in which a vision for the Hegewarren was developed. In order to get to know what is realistic and desirable in the Hegewarren, interaction with the different actors in the area was considered necessary. The actors and interests included in the Startnotitie are discerned in table 4.2.

Table 4.2 Actors and interests in Startnotitie (Provincie Fryslân, 2019)

Actor	Role/interest
The Province of Fryslân	Directing and facilitating actor within the peatland issues and principles of the Omgevingsvisie
Livestock farmers	Current operators in the Hegewarren whose future depends of the area's development
Wetterskip Fryslân	The current water management (functioning to serve the agricultural use) turns out to be expensive and creating a water retention area can contribute to the water board's objective of having 600 hectares of surface water before 2035
The municipality of Smallingerland	Economic growth by aiming for the shipping route to Drachten
Adjacent municipalities of Leeuwarden and Tytsjerksteradiel	Developments in the Hegewarren impact their municipal territory
The public ('Mienskip')	Representing interest groups like the surrounding villages Grou, Earnewâld, De Veenhoop, Oudega, nature manager It Fryske Gea, enterprises in Drachten, nature area Nationaal Park De Alde Feanen, and farmers union LTO Noord

As lots of parties have indicated that they would like to be involved in the process, co-creation was chosen as a process approach. By using co-creation, creativity, reality, and support are aimed for, with the participants influencing the process and the outcome. Furthermore, external actors – like designers and experts – were hired in order to develop ideas together with the others involved. Also, these external actors could enrich ideas and check feasibility, while interacting with the others involved.

5 Results

In this chapter the results from the qualitative data collection are documented. The results are structured on the basis of the theoretical concepts corresponding to the conceptual model. For each group of actors in the project – professionals and non-professionals – the results are documented along these concepts. The interview results are the main data in this chapter and observations and examples from the sessions (see Table 3.1) are used to complement the interview results.

5.1 The view of the professionals

The professionals in this project are the client, the experts, the member of the advisory committee, the project manager, the project manager representing the bureaus, and the process guiders. The data of these interviewees 1-6 (see Table 3.2) are structured along the concepts from the conceptual model.

5.1.1 Co-creation

5.1.1.1 Process

All professionals have a positive view of co-creation. Some professionals asserted that co-creation is just another terminology of participation instead of a totally new concept. However, in this project the governmental organizations stepped back and let the co-creation team design the variants. Then the governmental administrators give feedback to the team on the variants. The interviewee on behalf of the client calls this process “*radical co-creation*” because this is not the way projects are usually implemented. Though, the project manager from the consultancy bureau and the newly appointed project manager mentioned they did not experience the innovative character of co-creation in this project. They consider the project adopted a traditional way of doing things with the professionals showing plans to the co-creation team, which was then given the opportunity to reflect on. This also became clear from the video analysis, as the workshops were mainly used to discuss themes, developments, and to reflect on the designs. According to the interviewee from the consultancy bureau, the view of the client was also not clear and it seemed they had already an opinion about where the project should be steered towards: “*Sometimes the client told us what we should say in the workshops. So we could not always take our independent role because the province dictated what we needed to say; that does not fit well with co-creation I think.*” According to the interviewee that does not improve collaboration and freedom, and creative space was therefore limited.

All interviewees agreed that the necessity to execute the project digitally, due to the pandemic restrictions, acted as a hindering factor to really co-create in the project. Consequently, it took more time for the professional actors to get to know each other and to build a good working relationship. However, the client asked the bureaus if they already had worked together on projects to have an efficient collaboration: “*and we did ask. And it has also been said that they already have worked together, but in practice that was not the case with these people and that did cost a lot of time and hassle. So, regarding the inquiry and the way we recruited the bureaus, I would do that differently next time.*” Partly due to the digital environment, the time planning was tight according to the interviewees from the different bureaus, the process guider, and the project manager. The interviewee from the consultancy bureau mentioned that when the lockdown started in the end of 2020, the project should already be realigned as the initial planning was not feasible anymore. The interviewee considers that the requests for having evaluations had the effect of bringing the project back on track and that these should have taken place earlier in the process.

In the beginning of the process the objectives and preconditions were established by the client (see subsection 1.1.5) which should be considered when designing the variants. These were also mentioned by the client’s representative during the information session on the 10th of November. The project manager mentioned that the presence of the preconditions is a good thing to keep the designs focused

and that the co-creation team knows what the design boundaries are. The interviewee from the consultancy bureau mentioned that there were maybe too much design preconditions: *“you noticed that it stuck to the participants’ minds that the Province was going to enforce the canal. I think it was difficult for them to just forget that and to creatively continue with the other designs.”* The process guider agrees with both the project manager and the interviewee from the consultancy bureau: *“that is good on the one hand, because it then is clear and on the other hand, the variants and design variants can only be limited by the participants themselves, because they deal with preconditions that have been imposed on them. And that is also the offer for this process. So you can think along and try to make optimal, feasible, realistic and inspiring variants.”* According to the member of de advisory committee preconditions are necessary in co-creation processes as governmental administrators then share the power with the participants: *“if you do that you also record at the same time: if you stay within those preconditions, then we won’t make it difficult and we will do it.”* However, the advisor also mentioned that letting go of power is often difficult for governmental administrators which therefore make preconditions not very specific. That is the core problems according to the advisor, because if they leave the process open, without any guidelines, then they have the opportunity to later reject the plans because they do not fit well with their objectives. In the Hegewarren case, the advisor considers the preconditions are also not sufficiently specific and for this reason the participants sometimes indicated that they would like to have feedback from the governmental administrators to see what their view is on the variants. The client’s interviewee also mentioned this: *“we did ask the administrators if there are any objectives that you want to make smarter or for which you want to set a lower limit, but that did not happen. Because from the thought that it gives more creativity and more space, but also because they found it difficult to do, they want to see it first.”*

The client’s interviewee furthermore mentioned that probably not enough time was spent in the beginning to make the objectives and preconditions clear to the participants. Later in the process the participants were sometimes confused, and according to the client’s interviewee the first step was therefore executed too quickly. This was also noted in the workshops as participants sometimes asked about the project objectives and the way the process was organized. According to the expert from the architectural bureau, some governmental goals, like solar panels and water related goals should be made more clearer in the beginning of the process to give it a better chance. Also, the people that were involved in the project prior to the co-creation process from the client side were not involved anymore in the later stages. Therefore, the interviewee mentioned that their knowledge was not incorporated in the project, as it was lost or at least not well transferred to the experts. The architect would like to have had a couple of meetings in the beginning of the process to correctly process all information the client had available.

5.1.1.2 Collaboration

In addition, given the digital environment and the time needed to get to know each other, expectations of both the contractors and the client were not entirely clear and aligned. The project was assigned based on two contracts: one for guiding the process and one for delivering designs and specific content expertise. According to the process guider the bureaus and the process guiding party proposed similar plans in terms of phases and sessions, the expectations were different regarding the completion of steps. The process guider also did not know exactly what to expect from the bureaus because the contracts with the expected hours were not visible to them. According to the client’s interviewee, the project was constantly realigned because of the extra time needed in the process, for example with extra sessions to discuss certain themes; constantly constant communication about what to do within the available hours was necessary, as the digital workshops were much shorter than they would be physically. According to the architect it is an iterative process but there were some gaps in the planning, like the two-month gap in the new year which was needed for restructuring the project. The

member of the advisory group also pointed out that the structure of a co-creation process should never be strict in terms of phases because in practice there will always be a couple of iterations that need to be taken into account.

According to the process guider there were no issues in their contract with the client. The architectural bureau was hired for the other contract and the consultancy bureau was hired by the architectural bureau. As a result of this unusual combination the interviewee from the consultancy bureau mentioned that having three contractors makes collaboration complicated. It could only work if a clear collaboration agreement is signed, and otherwise the project should be contracted by only one bureau. Furthermore, the interviewee mentioned that besides the hassle with the participants there is also hassle between the bureaus as they are competitors. The client's interviewee also recognized this as there was a difference between the project inquiry and the way the bureaus executed it. In practice there was flexibility according to the client's interviewee, but contractually it was messy as clear agreements on flexibility and extra effort in the project were initially missing.

Another difference in expectations was noticed regarding the project management role. According to the process guider and the interviewee from the consultancy bureau the architectural bureau, the project management role was expected to be taken by the architectural bureau because they had the lead as designer and because they were the main contractor. According to the interviewee from the architectural bureau the project manager role was an omission from the client's side as it was not appointed at first and the client expected the bureaus to take that role in some way. However, the bureaus were mainly focusing on the content and on their own deliverables, rather than on aligning and integrating them within the overall project. Given this ambiguity, the process guider felt looked at by the other parties to take this role. However, the process guider mentioned that the agreements were not indicating this and that it was also not feasible since no clarity was given about the hours to spend by the other bureaus in the project as they had another contract. Then, evaluations were held which solved the problems and communication on the contractual side improved according to the client's interviewee. Furthermore, a new project manager was assigned to take the unclarity away about who had the lead. This newly appointed project manager mentioned that the different expectations were not initially shared and checked upon, and that led to the project management role not being taken up. This project manager also wondered why it could go wrong, because according to the project manager the right people were involved in the project. The project manager further mentioned that it is important to have clarity about who is in the lead and to give enough space for leading the project. According to the client's interviewee and the interviewee from the consultancy bureau the unclarity on both the project management role and the contractual agreements caused financial losses for the client and the bureaus.

5.1.2 Experts and expert knowledge

5.1.2.1 Expectations of expert role

The non-expert interviewees – the interviewees except from the architectural bureau and the consultancy bureau – all had similar views on how experts should operate in a co-creation process. According to the process guider, experts should provide the right information on the right time in the process, information that the participants cannot think of by themselves but which they need for discussions. After getting to know all insights and interests from the other participants, experts should not get stuck at just listening. According to the process guider, then they have to wrap up all these things and dare to bring in their own expertise and knowledge to develop something new. Also, the products need to be understandable and the participants should not be overwhelmed with information. The process guider recognized some difficulties regarding the role of the bureaus: *“I would think, if you participate in a co-creation process then you understand what it entails and you*

think about what kind of products are demanded in the process, but I recognized a grey area, like how should we do that? And what is actually necessary?" The process guider mentioned that after some conversations they (process guiders) took the role of translating the expert input to the co-creation team. According to the client's interviewee, experts should provide people's interests with feasibility and realism. Specifically, experts need to provide ideas and to trigger creativity, to determine what solutions are feasible in the area, and what implications and costs these bring about. So, knowledge, realism, and inspiration are important according to the interviewee. The role is first more informative and later more reflecting and reviewing. So, first listening is important, and experts then need to be able to *"sit on their hands"* and keep things easily comprehensible for the audience. According to the interviewee, the two bureaus in this project were not used to work in this manner, to listen carefully and make steps traceable for the audience. However, the interviewee recognized that at that time the expertise about the different themes in the designs was blending well into a nice conversation in which the variants were evaluated. The project manager described the role similarly; a supportive role, to provide information to make choices, and to substantiate designs with numbers. To add to the role descriptions given, the member of the advisory committee added that they should make something or deliver input on the right moment on which the co-creation team can further design. Also, experts should be able to operate and communicate well besides delivering their own specific expertise.

According to the interviewee from the architectural bureau, their role was spatial integrator, so connecting goals and ideas in a logical way and trying to steer discussions on the content. The architect mentioned that first the water system and the lay-out of the area were studied, which then formed the basis for the designs. Further, the architect brought knowledge on water levels in the process, and additional knowledge came up during the design phase. According to the architect, the role did not change during the project. The project manager from the consultancy bureau mentioned that according to the contract their role was to compute and model the different effects of the ideas and designs: *"I saw my role as a serving role, like you sign something, you want something, you have a question, and then I go find out what is possible or what the negative or positive effects are."* The bureau delivered experts on shipping routes, CO₂, hydrology, recreation, business case, cost estimation, quays, nitrogen, and ecology. According to the interviewee, in the beginning, expertise was directly provided in the workshop. This was for example noticed in workshop 2, when expertise on gas pipelines and subsoil was provided, and in workshop 3 when expert judgements were given on the different designs. However, according to the interviewee in the subsequent workshops it was the architectural bureau who was telling about the designs and the experts from the consultancy bureau were more in the background involved on investigating and computing things.

5.1.2.2 Role of experts in practice

So, theoretically the roles were clear but in practice they were not. According to the member of the advisory commission: *"the experts in the project did not deliver what they should deliver"*, and the process guider mentioned that the experts were struggling to convert the ideas of the co-creation team into plans. According to the process guider you need to reiterate a couple of times before you can move on to the more detailed design. The process guider mentioned this did not go well, as the experts were already moving to the end product, while only an expert judgement was needed in the process. According to the client's interviewee, in the beginning experts were not able to give satisfying answers to the members of the co-creation team. Also, experts did not know the area well yet and therefore it does not help trusting the expertise. Furthermore, the interviewee mentioned that it would be great if experts had all answers and key figures so that models would be from start more realistic. However, then it can also have contradicting effects according to the interviewee as creativity can be hampered, so interaction without hindering creativity is important. According to the interviewee, in this project

the expertise came too late as people said: *"you can talk again to us, but we want to hear what the effects of our thoughts are"*.

The expert from the architectural bureau experienced a difference in how the co-creation team and the experts approached the process. The architect would rather make some different variants before having an opportunity to reflect on it. In the project the co-creation team already had lots of opinions and thoughts about it. According to the interviewee from the consultancy firm their role did not succeed well because the project management role was not taken up. As such their role was not clear because multiple leaders were present in the process, and the client was very determinative and continuously caused confusion in the process. After the evaluations, the contracts were modified, the bureaus were directly hired, and the new project manager was appointed.

According to the process guider, both bureaus, and the newly appointed project manager and the experts were able to sufficiently answer questions although some were difficult to answer immediately. According to interviewee from the consultancy bureau, only in the first workshops questions were asked and answered by them and later some in the meeting's chat. This was noticed in the workshop videos, as until workshop 4 there were different questions to the consultancy bureau about pipelines, subsoil, and Natura 2000, but from then the questions were mainly answered via the chat.

According to the interviewee from the consultancy bureau the group was very big for online meetings. Sometimes there were break-out rooms in the meeting that worked well with answering questions and making sketches according to the interviewee. Therefore, the interviewee thought that this kind of sessions should have taken place more often. These break-out rooms were used in workshop 2 and 6, and in workshop 4 the group was split into two rooms. The architect also mentioned that co-designing in such a big group does not go well with the digital environment: *"it does not feel good when twenty people are waiting for you until you finished your drawing, as it takes a bit longer [online]"*. According to the architect and the project manager it was more preparing and reflecting, instead of co-designing. Also the interviewee from the consultancy firm experienced this: *"you are going to draw and figure out a lot of things. And you will present that again in the next session. While I thought it should go more the other way around. They should ask questions to us. The environment should give us ideas, and then we will draw, calculate, or figure things out. The traditional way, as we always do it, remains a bit. We did not get rid of that."*

According to the process guider, although their role was not what it was expected to be, the experts were effective in what they did. Also the architect thought they were pretty effective although they could be more effective in drawing and computing things if the process was not taking place in a digital environment. The architect also mentioned that the designs were sufficiently varied and that it is effective as they delivered what they should deliver. The interviewee from the consultancy firm answered both 'yes' and 'no' to the question whether they were effective. Technically, regarding computing and modeling, they were. But according to the interviewee in the end the variants were not as different as they expected them to be. The project manager also agreed that the experts were effective in computing and providing numbers with the design. The member of the advisory commission mentioned that effectivity is the extent to which you reach your goals. In co-creation there are generally more goals, so effectivity is more diffused. Therefore, the advisor mentioned that they can be less effective on specific themes but more effective regarding the process.

5.1.3 Locals and local knowledge

According to the client's interviewee local knowledge is essential because the experts are too far away to know enough about the area, and faults are quickly made which could have consequences in court.

Experts need to listen well and show in the remainder of the project that they listened well and make steps traceable, according to the interviewee. The interviewee also mentioned that if local people are involved in such a process and their stake is being threatened, then they become creative in the sense that they try to think of solutions that can best incorporate their stake in the designs. The bureaus also acknowledged in de workshops that local knowledge is very important in designing.

Also the member from the advisory commission mentioned that local knowledge is very important as they always have additional information which is not available for the government. In workshop 5 this was for example noticed, as local actors provided local knowledge and facts on accessibility of bicycle routes, ferries, and sluices. In such processes you should explicitly ask for that local knowledge as it is equivalent to expert knowledge, according to the advisor. However, the advisor also mentioned there can be an over-focus on local knowledge.

The interviewee from the consultancy bureau was impressed and positively surprised by the cooperativeness of the locals and mentioned that their knowledge is very valuable in the project. Some participants also have a professional background which facilitates their active participation in the project, which was also recognized by the architect. Furthermore, the interviewee from the consultancy firm mentioned that they maybe could have better emphasized the way the local knowledge was incorporated, as such an approach also leads to increased public support.

The process guider also mentioned that experts cannot know the area as good as the locals do, so sometimes they need to clarify certain aspects in collaboration with the locals in order to make the right assumptions in calculations. Also, the process guider mentioned that expert information and reports are not always accepted by the participants. For example, safety on water was perceived in different ways by different actors. Therefore, according to the interviewee, participants should be encouraged to think about each other's perspectives rather than solely focusing on their own perspective. Once multiple dilemmas and perspectives are set on the table, the discussion becomes more relevant.

5.1.4 Interaction

The process guider considers the interaction between local knowledge and expert knowledge as very useful. It is sometimes important that experts really listen to the local wishes and interests and that they acknowledge that in their actions in order to get on well together. According to the process guider, facilitating direct conversation between the experts and participants enriches the discussion with lots of knowledge. This interaction was facilitated through the thematic sessions in which direct interaction took place between the co-creation team and the experts. The project manager also considered the thematic sessions very useful because a direct conversation in which perspectives can be shared and questions can be asked helps to build up trust. The architect considered the interaction as good, but mentioned that more time for interaction would have been useful in the design process, especially because the digital environment did not provide enough interaction and space for the locals to exchange ideas. According to the architect, the experts could use the local knowledge well in their advices. The interviewee from the consultancy firm also mentioned that there was not enough room for interaction, partly because the designs are explained continuously instead of having time to discuss the variants with the co-creation team. The project manager also agreed that more time on interaction would have been great, but that was not possible because of the digital environment and the tight schedule. The project manager also thought that the participants were happy with how their local knowledge was taken up by the experts. According to the member of the advisory committee, experts should interact in another way in a co-creation process compared to the regular approach in projects. They should communicate well in such a process, and they also should know when to keep quiet. From the advisor's point of view in terms of context, the deliverables need to be understandable for the

participants. Some decades ago, the expert could just deliver the product and the client would rely on the expert according to the advisor. In a co-creation process there is a group with which interaction is much more direct. And if some information from the expert is not right, they immediately know as they have the local knowledge. Therefore, the advisor mentioned that the expert's legitimacy has probably decreased.

A big challenge mentioned by the process guider and the client's interviewee was the precondition that the shipping route should not obstruct the discussion on designs in the process. This was for example noticed in workshop 2, when discussions were on the need and necessity rather than on the designs. Therefore, the client communicated to the bureaus that they thoroughly needed to consider how they were bringing in that subject. Distrust in the government regarding the shipping route was present during the process according to the client's interviewee, who mentioned that co-creation was used to deal with that as much as possible: *"with a co-creation conversation you try to take the sting out, but it never totally succeeds. But if you don't do it, then it's much worse."* According to the interviewee from the consultancy bureau, both bureaus thought that the way of bringing things into the process was approached too prudent by the client. As a consequence, people's trust could decrease as they then begin to see things that are not there according to the interviewee.

Beside the interaction with the professionals and non-professionals, also the professionals among each other encountered difficulties in interaction because of the digital environment. The architect mentioned that after the evaluations, internal working sessions were held in which the professionals met in a physical setting, which facilitated the discussions and further elaboration of the results from the co-creation workshops. The architect mentioned that such sessions with the client side in the beginning would have been helpful in order to process all information available. The client's interviewee mentioned that with three bureaus it was difficult to determine who should take the lead. According to the interviewee it did not work particularly well with three bureaus and therefore the next time they would like to work with a single contractor. Also, then the client's interviewee would demand collaboration, both between bureaus and between the participants.

Language and choice of words is considered very important by the interviewees from the client, process guider, project manager, and the consultancy bureau. The process guider for example mentioned that spelling the toponyms from the area right is very important. So, the professionals need to show that they do their best to know the area well and to be interested in the local's knowledge according to the process guider. From the session videos it was noticed that it was not always going well, as for example some names were spelled wrongly in a thematic session. Furthermore, the process guider mentioned: *"telling your information as an expert should be done in a very context sensitive manner. That is a way of working that is according to me important in co-creation or in working with local actors, but it does not directly tie with the way how a consultancy bureau works, where it is more about making products in the way they are used to do."*

5.1.4.1 Digital environment and trust

According to all interviewees it was a huge limitation to execute the process digitally. Interaction was less convenient and there was not the possibility to have informal talks before or after sessions. Also, the interviewees would like to visit the area together with the locals so that they really could engage with them and with their knowledge. The member from the advisory committee, the process guider, and the client's interviewee all mentioned that building up trust is working much better physically than in a digital environment as it takes much more time and effort digitally. The project was paused for two months, and for the client's interviewee it became clear that interaction was stiffer than before because of that pause. Also, physically there is more room for informal contact to solve minor issues if needed. The client's interviewee for example mentioned that if there were now issues in the process,

then it immediately became a big deal as it was straightly shared into the group meeting with all participants listening. This was for example noticed in workshop 2 and 5, when actors expressed their dissatisfaction with the process. The process guider tried to involve everyone in the process and was available for individual phone calls or email communication in case a participant wanted to privately share an opinion. For example, people could make appointments for individual consultation hours. The other interviewees considered this availability for informal contact as very helpful for the process. Though, the process did not start with a neutral playing field according to the process guider. There was a lot of distrust as the canal is a sensitive subject for some of the participants. The process guider mentioned that some extra effort was needed to create the inclusive dialogue. Although the level of trust in the client and experts was sometimes low regarding the canal, the project manager also mentioned that there was trust in the project: *“people just said frankly in the chat: I think this is a bad idea. Well, then there is trust if you can just say it that way.”* The member of the advisory commission mentioned that possibly more influence or power should be given to participants on topics where there is distrust. Similarly, if there is a lot of trust on a certain topic, then the advisor mentioned less influence can be given to participants as it contributes to efficiency.

5.1.4.2 Actors involved

According to the architect, the group composition of the co-creation team could be more diverse in terms of age. The interviewee from the consultancy bureau mentioned that more insight into selecting participants and analyzing stakeholders would be helpful for them: *“yes, I think that’s a very good question, why that group is there and how it is selected and you should do that very diligent, because the whole process depends of that.”* The interviewee also mentioned that it would probably be a good idea to also invite other organizations in the process that can represent interests of meadow birds and nature. The member of the advisory committee mentioned that farmers also could have a say in the process as they have loads of local knowledge. The client’s interviewee did not have extra suggestions for parties to be involved in the process.

More interaction could have taken place between the governmental administrators and the co-creation team according to the architect, as governmental goals would then be clearer for the co-creation team. The architect mentioned that it is a risk to exclude the governmental administrators from the process, because the designs may not be in line with their exigencies, which might lead to the designs not being used. However, the architect mentioned that no conclusion can be yet drawn about this aspect as only time will tell how the designs will be used. The interviewees from the client and the consultancy bureau also mentioned that the governmental organizations probably could be invited earlier in the process to let them share their view on the designs, especially since co-creation participants were asking for that.

5.2 The view of the non-professionals

The non-professionals in this project are the people who live in the Hegewarren and in the surrounding area, those who regularly visit the area, or have or represent an interest in the area. The data of interviewees 7-10 (see Table 3.2) are structured along the concepts from the conceptual model.

5.2.1 Co-creation

The precondition of including a canal in one design variant was a sensitive subject for some members of the co-creation team, who therefore constantly expressed their critical view on the canal. Both the resident and the interviewee from the neighboring village found this very annoying. Therefore, the interviewee from the neighboring village did not want to participate anymore if the process would continue in that way, which was communicated directly and plenary in workshop 2. The interviewee from the neighboring village therefore thought it was good that the precondition of the shipping route was in place, without having to discuss the need for the canal. External to the process, the interviewee mentioned that people will not change opinions if they were once against the canal. The resident mentioned an example of a conversation with an opponent of the canal: *“a man visited me yesterday and he said that we needed to align our disagreements on the canal. I said, mister [...], I don’t want to align anything. Well, he began to talk about double agendas, but he has often stories like that”*. Internally, the opponents got to see that it does not necessarily impact the area that severely and therefore their restraining view was attenuated according to the interviewee from the neighboring village. Although there were different interests and there was sometimes some distrust, the interviewees experienced trust in the process.

A participant mentioned in workshop 3 that not enough attention was given to the interest of water recreation as the college tours were focusing on other themes. Therefore, the participant felt that the project was steered towards the other themes. Later in the process also more attention was given to the interest of water recreation. Another participant mentioned that he was surprised by the design process in which the variants were already partly designed. The participant assumed the process was supposed to be open, and the participant did not feel it to be that way. However, later in the workshop participants mentioned to be positively impressed by the designs.

According to the interviewee from the neighboring village a strong point of this process is that different interests and opinions were neutralized. However, the interviewee mentioned that a mistake is made in the end of the process, as participants are asked to give a review on each of the variants: *“instead of presenting it neutrally to the governmental administrators, you now get all those opinions again. And whoever shouts the loudest and is able to put their opinion the clearest in the review, will have a head start later on. So that’s actually a slip, it shouldn’t have happened.”* According to the interviewee, another risk in the project is that the governmental administrators will not choose for one of the designs, and then the participants feel disappointed. Also the interviewee from the nature area acknowledges that risk. The interviewee representing the farmers therefore mentioned that for example also municipal experts could have joined the process to make sure the solutions are feasible and according to the objectives. Also the project managing and steering role was considered very important by this interviewee.

The interviewee from the neighboring village and the nature area mentioned that the preconditions were clearly formulated. The resident mentioned the preconditions should be weighed differently as they are not all evenly important. The representative of the nature area mentioned that because of the low number of preconditions, there is quite some space to co-create. According to the interviewee representing the farmers the objectives by the province were clear, but the objectives of the waterboard and the municipality were lacking. The interviewee mentioned that designs can therefore

more easily be rejected if they are not according to these organizations' visions. The interviewee further mentioned the objectives were not sufficiently taken into account in the first workshops. The interviewee mentioned that in hindsight it would be better if there was an intervention by the process guiders, because there were some ideas that were just not feasible regarding the objectives.

Halfway the process – when the project planning was extended with two extra workshops – the resident had informal contact with the process guiding party about the issues in the project. The process guiders did well according to the resident as all suggestions and critical views were dealt with well, with the participants mostly being satisfied with the answers. Also the interviewee from the neighboring village considered the project guiding party to be very important. Overall, the interviewees and the participants were overall happy and satisfied with the process and they think the project was guided well regarding the group size and the digital environment. This was also noticed in the final workshop as the participants collectively showed appreciation and applause for the professional actors in the project.

5.2.2 Experts and expert knowledge

According to the interviewee from the neighboring village the backgrounds of the experts were sometimes different, as an expert mentioned the use of solar panels in workshop 5. The participants were unanimously against solar panels, but according to the interviewee people from other places look very differently to the area and its functions. The interviewee mentioned that experts should take the contextual differences into account. Also, wet cultivation functions were mentioned by external experts, like cattail and reed. However, the financial feasibility of those functions was sometimes overestimated and idealized according to both the interviewee from the neighboring village and the farmers' representative. Also, the interviewee representing the farmers thought the solutions regarding nature were sometimes too idealistic.

According to the interviewee from the neighboring village, experts sometimes had trouble with processing all input from the sessions into designs. However, the interviewee also was sometimes amazed by the nice designs that were made. Overall, the experts did well according to the interviewee as they were approachable, and they processed and explained the ideas well. The experts were effective and efficient, although there were always some minor issues which is logical in such an open process according to the interviewee. The interviewee representing the farmers was at first not satisfied with the experts by the consultancy bureau as concrete plans and numbers were not given at first, but later in the process the interviewee was satisfied as the plans became more concrete. The interviewee mentioned that also because of the role of project manager, the experts concretized the designs well. The resident was happy with the draft designs that were developed by the bureaus, but halfway the process the resident was not satisfied. The designs became very detailed while the resident, similarly to the farmers' representative, would have preferred to have more global design ideas in the beginning, substantiated with some numbers. A participant mentioned this in the continuation workshop 3, that the progress of the process depends on the work by the consultancy bureaus. If the bureaus could already indicate the global effects of certain measures, it would help them a lot in designing and therefore to hold on to the project planning. Also, the resident mentioned that the expertise on the canal was not done very well the first time, as according to the resident the numbers were not always correct, and the story was inconvenient to grasp. This improved later in the process according to the resident.

The interviewee from the nature area thought the experts did well, especially because they had to deal with the digital environment. The interviewee further mentioned that experts should be given space on a certain moment in the process. The interviewee would rather have first a phase of cooperation between experts and local actors, then have a phase in which experts is given space so that they can

develop variants based on their knowledge. And then there can be a last phase of finetuning by local actors. Now the laymen were continuously involved in all kind of details in the designs, which was not necessary according to the interviewee. The interviewee representing the farmers also mentioned the experts could have been a bit more compelling in concretizing and determining feasible solutions: *“that they sometimes really say, you can think of this, but it's just not feasible in such a polder”*. The interviewee further mentioned that the expert bureaus could be informed better by the province, for example on reports regarding the area and its subsoil.

The experts dealt well with questions according to the interviewees from the neighboring village and the nature area. According to the interviewee from the nature area the main task of the experts was to inform and to stimulate public support. It was kind of a search for putting the right expertise in the process according to the interviewee. The interviewee therefore considered the addition of thematic sessions with the external experts as a good intervention.

The resident was bothered by the fact that the different professionals have not visited the area in the beginning of the process. Also according to the interviewee from the neighboring village it was necessary that they visited the area as: *“If you see it on paper and see it in the photo, you understand how it is. But when you see it in real life, it's just a little different”*. Though, the resident mentioned that maybe the bureaus did not mean to be fully informed already in the beginning of the process, to stimulate discussion among participants.

5.2.3 Locals and local knowledge

The interviewees mentioned that they tried to think along with the different interests and objectives, so that the designs would benefit the most out of the local knowledge. Also, the interviewee of the neighboring village mentioned that the other participants were very well able to contribute to the process, also because of their professional background. The farmers' representative is an example of such a participant as he was a farmer for 40 years and also had experience with holding several roles in both governmental and private organizations. Local knowledge and local facts were very useful in the project and were taken into account by the bureaus according to all interviewees.

The interviewee from the nature area questioned the extent to which the view of local actors should be taken into account, as experts have much more knowledge on the content: *“you also have that with referendums. The layman, the public must decide yes or no on a very substantive subject. Then I question, what kind of knowledge do they really have?”*

5.2.4 Interaction

Overall, the interaction went fine according to the interviewees. Sometimes it was difficult to communicate about specific parts of the designs as it was not possible to digitally point at things according to all non-professional interviewees. If it would have been possible, all interviewees would have liked to participate physically as communication is then much easier and there is also room for informal contact. The resident also found the digital environment complicated as it was difficult to quickly reflect on designs digitally. Especially in the later stages with more detailed designs the process was sometimes inconvenient and difficult to follow according to the resident. According to the interviewee from the neighboring village people listened well in the process, also to other interests.

The right parties were present in the process according to the interviewees. Though, the farmers' representative mentioned that probably some farmers could have also joined the process, as buying out seems more difficult than expected.

6 Discussion and conclusion

In this chapter's discussion the results are elaborated upon based on the theory from chapter 2. Also, answers are provided to the secondary research questions, and specifically questions 4, 5, and 6. The final section of this thesis is the conclusion, in which the main research question is answered.

6.1 Discussion

The results of this thesis are in the following subsections compared with the theories from chapter 2 along the same structure of concepts that was used in the results chapter: co-creation, experts and expert knowledge, locals and local knowledge, and interaction.

6.1.1 Co-creation

Co-creation originally implies the development of products through collaboration with different actors (Ramaswamy, 2011). The definition corresponds well to the Hegewarren project as designs were developed in collaboration with the co-creation team, consisting of different actors with different interests. Collective creativity is also mentioned in theory as important aspect of co-creation (see Cottam & Leadbeater, 2004; Rill & Hämäläinen, 2018; Sanders & Simons, 2009). In the Hegewarren project, creativity is enabled as the co-creation team was part of the design process and no strict design requirements were given, except from the canal.

Although a low number of preconditions and design requirements opens the space to creatively co-create according to the theory, it also can have negative effects. If preconditions are left open, it allows governmental administrators to reject plans. According to Akilesh (2017) ensuring the support and commitment of the top management is an informal aspect of co-creation, and in this research this aspect seemed extremely important to some interviewees in terms of preconditions. The member of the advisory committee for example mentioned that there are always preconditions, and both the advisor and the farmers' representative mentioned this as a huge risk as they fear the plans to be rejected by the governmental administrators. Therefore, paying attention to the preconditions and design requirements in co-creation processes is an important aspect that could be important for both theory and empirics.

According to Rill and Hämäläinen (2018) highs and lows are common in co-creation processes, and breakthroughs sometimes need to be forced by breakdowns. In the Hegewarren project there were also highs and lows. Based on the insights from the interviews and video sessions, the lows were particularly present on the professional side regarding contracts and collaboration. According to Akhilesh (2017) it is important to have clear contracts and allocation of duties and responsibilities. By having two contracts, the bureaus were competitors on some moments and this made things complicated sometimes. Therefore, in line with the interviewees, having a single contractor or having a collaboration agreement in place would be recommended. Theoretically the allocation of duties and responsibilities was clear in the Hegewarren project according to the professional interviewees. However, practical fulfilment regarding the responsibilities of the project managing role and the role of experts was sometimes a misery according to the interviewees, with huge financial consequences. Therefore, the importance of contracts and the clear allocation of duties and responsibilities is underlined in this project.

The process guiding role is mainly mentioned in literature as an important role in managing co-creation projects (see Rill & Hämäläinen, 2018; Steen & Van Bueren, 2017). Also in the Hegewarren project this role was considered as very important, both by the professional and non-professional actors. However, the importance of the project managing role is also underlined in this project. By having a pause moment around March and April in which evaluations took place, led the project to go back on track

again in May, thus reflecting the conclusions of Rill and Hämäläinen (2018) who mention that sometimes to have a breakthrough there is a need to go through a breakdown. As such, there were also highs in the project as participants showed their satisfaction with the process in the interviews, and plenary in the final workshop with applause.

The professional interviewees see the process to be an iterative one, in which different cycles of interaction were present, thus confirming the findings of Rădulescu, et al. (2020) and Rill and Hämäläinen (2018) who assert that in co-creation the process of knowledge sharing and designing has an iterative character. Designs were updated and redesigned multiple times and in line with the theory, this process also can be considered as iterative. Flexibility is needed in co-creation as it is an iterative process with a degree of chaos in it according to Rill and Hämäläinen (2018). In the Hegewarren flexibility also seemed important as for example the project planning was multiple times modified or extended (see Table 1.1 & Table 3.1). For example, with the college tours and thematic sessions extra input was requested from actors and experts outside of the initial co-creation process. This is also in line with theory as according to Rill and Hämäläinen (2018) sometimes these extra input sessions are needed to provide the process with valuable information.

6.1.2 Experts and expert knowledge

Experts see themselves often as service providers, while they would do better from a perspective of lead partners in service development according to Thomas (2013). Then their role is more focusing on facilitating debate rather than providing answers (Warner, 2006). In the Hegewarren project, the consultancy bureau saw their role as a serving role, in which effects of ideas were given and answers were provided. Consequently, debate is facilitated with this role. The architect saw the role as spatial integrator, to connect ideas and to steer discussions. With the serving role from the consultancy bureau and the steering role of the architectural bureau, the roles are similar to the descriptions by Thomas (2013) and Warner (2006). In the co-creation workshops these roles were also practically fulfilled. The architect steered the design process and steered the discussion on the designs, with also the process guiding party taking that role. The consultancy bureau provided expert judgements and specific expertise on the themes that were needed in the process in order to facilitate discussions.

An aspect which is not explicitly mentioned in theory, as it probably goes without saying, is that experts should have featured all available information in the beginning of the process from the client side. Both the architect and a non-professional actor mentioned that reports or additional information sometimes was present later in the process, while it could have been brought in earlier on. Also experts could be more informed about the stakeholder analysis and selection.

Beside the experts themselves, both professional and non-professional actors had a similar view on how experts should participate and contribute to co-creation processes. First, they need to listen to the other actors in the co-creation team. Then, they need to wrap these insights up and make something creative and understandable out of it. Also, their products should be provided on the right time in the process. Furthermore, global insights on ideas should be provided instead of working on a very detailed product already. Consequently, the co-creation team then sees the first effects of the ideas they developed, and then there is room to steer the designs in an iterative way. This ideal co-creative role of the experts could be a nice adding for both theory and empirics as there is little research on the role of experts and professionals in co-creation processes (Steen & Tuurnas, 2018), and as it is according to Özdemir (2019) valuable to research the role of experts and their knowledge in different contexts.

6.1.3 Locals and local knowledge

According to Woodhouse and Nieusma (1997) the knowledge and input of local actors has gained importance in co-creation processes as they are increasingly involved in judging values. In the Hegewarren process this increasing importance was noted as local actors were involved throughout the process to continuously discuss designs and reflect on ideas. According to Brandsen, et al. (2014) and Steen and Tuurnas (2018) citizens or residents are often considered as experts who can best respond to local opportunities and issues because of their local knowledge. In the Hegewarren project the local actors were also considered as local experts, both in the workshops and in the interviews by both professional and non-professional actors.

6.1.4 Interaction

According to Cottam and Leadbeater (2004) in co-creation a new combination of local and expert knowledge is sought. Whether or not the combination in the Hegewarren project can be considered new, this combination was fulfilled as experts and local actors communicated on themes and designs. As such, local knowledge was incorporated in the designs realized by the experts. According to Rill and Hämäläinen (2018) the process guider needs to 'hold the space' in between the process, people, and environment to create a space in which people feel free and safe to speak. Both from the interviewees and from video analysis it seemed people were able to speak safely, as for example participants sometimes just frankly said that they did not like certain ideas.

Language and choice of words was considered important by both professional and non-professional interviewees. Sometimes a single word could make a difference according to some interviewees. Also, interviewees mentioned it would help if actors would firstly visit the area if they are not familiar with it. This is in line with the findings by Steen and Van Bueren (2017) and Rill and Hämäläinen (2018); who mention that communication improves if context-specific language is used and jargon is minimized.

Overall, all interviewees mentioned interaction was hindered because of the necessity to execute the project digitally. As this was the result of the unforeseen Covid-19 pandemic, there is limited literature on executing co-creation processes online. Therefore this thesis could be valuable both for theory and empirics in case co-creation processes will take place online in the future, for example as a result of unforeseen circumstances or because of digitalization. First, communication and interaction need to be given more attention in online processes as it is less easy for everyone to express their views. Therefore, flexibility in terms of timing needs to be incorporated in the design of digitally based co-creation process to accommodate enough room for interaction. Secondly, in online sessions there is less room for informal contact to solve some issues. If there was an issue during the process, it was directly shared in the group meeting with all participants listening. Thirdly, it seemed digitally less easy to realize how other participants felt during the process. Therefore, regular evaluations were considered necessary and also proved to be necessary in this project according to the professional interviewees. Finally, group size needs to be taken into account in all co-creation processes, with even more attention paid to it in those taking place digitally. According to some interviewees, co-creation with a big group does not work well and the group size should be limited to approximately 20 participants; for this reason, break-out rooms can be considered a good solution in case designs need to be made with multiple participants.

6.1.5 Wrapping up the discussion

As was mentioned in section 3.2, the purpose of this case study of the Hegewarren project is not to generalize, but to understand the case and to draw lessons based on this case. Therefore, as it is only one case, the results can be valuable, but they are not necessarily one on one applicable to other projects and contexts. Also, due to the Covid-19 pandemic the project could not take place physically. As also became clear from the interviews the digital environment impacted co-creation and especially interaction. Therefore, the results would probably differ when the project would have taken place physically. Though, lessons from this co-creation process can still be valuable as there is relatively little research on analyzing co-creation practices and on the role of the experts/professionals in co-creation processes.

Both in chapter 2, chapter 5, and in this chapter 6, the secondary research questions have been answered. They are shortly summarized below.

1. What is co-creation and does this concept fit theoretically with the Hegewarren project?

Co-creation implies a collaborative and creative effort undertaken collectively by a variety of actors, in which a product or idea is developed, and for which exact requirements are not defined in advance. In the Hegewarren project, the collaborative and creative effort was reflected in the workshops in which different actors collectively designed variants, as far as it was possible online.

2. Which interests are at stake in the Hegewarren and how do these connect to theory on co-creation?

Various actors are participating in the project (see subsection 1.1.4) by sharing and discoursing their interests in the co-creative workshops. The theoretical roles of both professionals and non-professionals were present in the Hegewarren project.

3. What is the role of expert knowledge in a co-creation process, and what determines effectivity?

Based on theory, the role of experts in co-creation processes mainly consists of providing service and acting as a lead partner. As such, experts are expected to develop services in cooperation with service users. A similar description was given by the interviewees, as experts have a serving and steering role. Specifically, according to most interviewees they first need to listen to the other actors in the co-creation team. Then, they need to wrap these insights up and make something creative and understandable out of it. Also, their products should be provided on the right time in the process in order to contribute effectively to the process.

4. Who are the experts in the Hegewarren project, what do they do, and how do they do this?

Multiple experts were present in the Hegewarren project: process experts, bureaucratic experts, and local experts, architectural experts, and other experts having a specific expertise. This thesis focused mainly on the role of the experts from the consultancy bureau and also the experts from the architectural bureau. The architect steered the design process and developed the designs. The experts from the consultancy bureau modeled, drew, and calculated spatial aspects based on the ideas from the co-creation team.

5. How takes communication place between experts and the other actors in the co-creation process in the Hegewarren project?

Communication took place in the digital group meetings (see Table 3.1). Especially in the thematic sessions direct interaction was enabled.

6. How do the different actors experience the co-creation process in the Hegewarren project?

Overall, the non-professional actors were satisfied with the process, apart from some minor issues. In the beginning of the process, the professional actors faced some issues regarding expectations and contractual issues. This improved after the evaluations. According to all actors, interaction in the process was not always optimal due to the digital environment, but nevertheless the workshops were guided well.

6.2 Conclusion

The answers to the secondary questions help to answer the main research question of this thesis: *“How can expert knowledge be used in a co-creation process – like the Hegewarren – in a way that it is effective and appreciated by the others involved?”*

Based on the results, four main conclusions can be drawn on how expert knowledge can be used and the role of experts can succeed. **First**, the way of contracting influences the way experts operate. Based on this case, having a single contract or a collaboration agreement would improve collaboration. Contracts should be clear and not too complicated since the co-creation process itself needs already a substantial amount of effort and energy. **Second**, talking through the expectations in the beginning would have helped the project, as now the actors sometimes did not know what to expect from each other. Attention should be paid to both expectations between professionals themselves, and the expectations between professionals and the other actors in the process. Then, an expert role could be aimed for which seemed to be most appreciated in this project: first listening to the different interests, then wrapping up insights and create with their knowledge a product, and then communicating the product to the co-creation team again in a way that it is understandable. Also, especially in co-creation processes the products need to be in time as multiple actors in the co-creation team need those products in the workshops. In the beginning of the process these products do not need to be focused on the details but rather need to make the global effects of the designs visible for the co-creation team. **Third**, experts should invest time and effort in the beginning of the process to become familiar to the area. Especially in a co-creation project, where there is continuous interaction with local actors, it is important that experts know where they talk about and no energy is lost in misunderstandings regarding the area. **Finally**, clear allocation of responsibilities and roles is important for good collaboration between experts and the other actors. Especially the role of project manager should be assigned very clearly as this role seemed to be very important in this co-creation process.

6.2.1 Recommendations

As this thesis focused on one case, the first recommendation would be to analyze more co-creation processes and the role of experts herein. This would also further fill the research gap mentioned in section 1.2. A second recommendation would be to compare the results of analyzing digital co-creation processes with physical co-creation processes, so that process initiators are aware of the differences and potential issues. Thirdly, a comparison between the satisfaction and public support with co-creation processes and more traditional projects could be valuable, as projects do not necessarily need to include a co-creation process to accomplish objectives. This was also mentioned by some interviewees who did not necessarily saw the need to have a lot of co-creation workshops, but rather would give experts more space to work on designs. Fourthly, a future analysis on the co-creation process would be valuable after the entire project is finished, as actors involved then have a complete view on the project and the position of co-creation herein.

References

- Akhilesh, K., 2017. *Co-creation and learning*. 1st ed. New Delhi: Springer.
- Allmendinger, P., 2017. *Planning theory*. 3rd ed. London: Palgrave, Macmillan Publishers Limited.
- Arciniegas, G. & Janssen, R., 2012. Spatial decision support for collaborative land use planning workshops. *Landscape and Urban Planning*, 107(3), pp. 332-342.
- Arnstein, S., 1969. A ladder of citizen participation. *Journal of the American Institute of planners*, 35(4), pp. 216-224.
- Bennet, N., Wise, C., Woods, P. A. & Harvey, J. A., 2003. *Distributed Leadership*. Nottingham: National College of School Leadership.
- Bertolini, L. & Spit, T., 2005. *Cities on rails: The redevelopment of railway stations and their surroundings*. New York: Routledge.
- Bovaird, T. & Loeffler, E., 2012. From engagement to co-production: The contribution of users and communities to outcomes and public value. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 23(4), pp. 1119-1138.
- Brandsen, T. & Honingh, M., 2013. Professionals and shifts in governance. *International Journal of Public Administration*, 36(12), pp. 876-883.
- Brandsen, T. & Honingh, M., 2018. Definitions of co-production and co-creation. In: T. Brandsen, T. Steen & B. Verschuere, eds. *Co-production and co-creation: Engaging citizens in public services*. New York: Taylor & Francis, pp. 9-17.
- Brandsen, T., Trommel, W. & Verschuere, B., 2014. *Manufactured Civil Society: Practices, Principles and Effects*. London: Palgrave Macmillan.
- Briggs, X., 2008. *Democracy as problem solving: Civic capacity in communities across the globe*. Hong Kong: Massachusetts Institute of Technology.
- Bryson, J., B.C., C. & Bloomberg, L., 2014. Public Value Governance: Moving beyond Traditional Public Administration and the New Public Management. *Public Administration Review*, 74(4), pp. 445-456.
- Campbell, J., Quincy, C., Osserman, J. & Pedersen, O., 2013. Coding in-depth semistructured interviews: Problems of unitization and intercoder reliability and agreement. *Sociological Methods & Research*, 42(3), pp. 294-320.
- Christensen, K., 1985. Coping with uncertainty in planning. *Journal of the American planning association*, 51(1), pp. 63-73.
- Clifford, N., French, S. & Valentine, G., 2010. *Key Methods in Geography*. 2nd ed. London: Sage.
- Coghlan, D. & Brydon-Miller, M., 2014. *The SAGE encyclopedia of action research*. 1st ed. London: Sage.
- Cottam, H. & Leadbeater, C., 2004. *RED paper 01: Health: Co-creating services*, London: Design Council.
- De Koning, J., Crul, M. & Wever, R., 2016. *Models of co-creation*. No. 125, Linköping University Electronic Press, pp. 266-278.

- De Roo, G., 2003. Planning-oriented action in a theoretical perspective. In: G. De Roo, ed. *Environmental Planning in the Netherlands: Too good to be true*. Aldershot: Ashgate, pp. 89-156.
- De Roo, G., 2007. Shifts in Planning Practice and Theory: From a Functional Towards a Communicative Rationale. In: G. De Roo & G. Porter, eds. *Fuzzy Planning - The role of actors in a fuzzy Governance environment*. Aldershot: Ashgate, pp. 103-113.
- De Roo, G., 2007. The role of actors in a fuzzy governance environment. In: G. De Roo & G. Porter, eds. *Fuzzy Planning - The role of actors in a fuzzy Governance environment*. Aldershot: Ashgate, pp. 115-130.
- De Roo, G., 2010. Being or becoming? That is the question! Confronting complexity with contemporary planning theory. In: G. De Roo & G. Porter, eds. *A planner's encounter with complexity*. Farnham: Ashgate, pp. 19-40.
- De Roo, G., 2019. *Planning Theory lecture*. Groningen: Rijksuniversiteit Groningen.
- Denhardt, R. & Denhardt, J., 2000. The new public service: Serving rather than steering. *Public administration review*, 60(6), pp. 549-559.
- Duit, A. & Galaz, V., 2008. Governance and complexity - emerging issues for governance theory. *Governance*, 21(3), pp. 311-335.
- Dunn, K., 2005. Interviewing. In: I. Hay, ed. *Qualitative Research Methods in Human Geography*. Melbourne: Oxford University Press, p. 79-105.
- Duțu, A. & Diaconu, M., 2017. Community participation for an open public administration: Empirical measurements and conceptual framework design. *Cogent Business & Management*, 4(1), p. 1287980.
- Edelenbos, J., Van Buuren, A. & van Schie, N., 2011. Co-producing knowledge: joint knowledge production between experts, bureaucrats and stakeholders in Dutch water management projects. *Environmental science & policy*, 14(6), pp. 675-684.
- Edelenbos, J., van Schie, N. & Gerrits, L., 2010. Organizing interfaces between government institutions and interactive governance. *Policy Sciences*, 43(1), pp. 73-94.
- Eshuis, J. & Stuiver, M., 2005. Learning in context through conflict and alignment: Farmers and scientists in search of sustainable agriculture. *Agriculture and human values*, 22(2), pp. 137-148.
- European Commission, 2020. *COMMISSION STAFF WORKING DOCUMENT: Commission recommendations for The Netherlands' CAP strategic plan*. [Online] Available at: https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/key_policies/documents/cap-strategic-plans-c2020-846-swd-nl_en.pdf [Accessed 2 February 2021].
- European Commission, 2020. *Natura 2000*. [Online] Available at: https://ec.europa.eu/environment/nature/natura2000/index_en.htm [Accessed 26 November 2020].
- Evans, J. & Karvonen, A., 2011. Living laboratories for sustainability: exploring the politics and epistemology of urban transition. In: H. Bulkeley, V. Castán Broto, M. Hodson & S. Marvin, eds. *Cities and low carbon transitions*. London: Routledge, pp. 126-141.
- Fledderus, J., 2016. *User co-production of public service delivery: Effects on trust*, s.l.: s.n.

- Fleming, J. & Rhodes, R., 2018. Can experience be evidence? Craft knowledge and evidence-based policing. *Policy & Politics*, 46(1), pp. 3-26.
- Flyvbjerg, B., 2006. Five misunderstandings about case-study research. *Qualitative inquiry*, 12(2), pp. 219-245.
- Friedmann, J., 1987. *Planning in the Public Domain; From Knowledge to Action*. Princeton, New Jersey (US): Princeton University Press.
- Futrell, R., 2003. Technical adversarialism and participatory collaboration in the US chemical weapons disposal program. *Science, Technology, & Human Values*, 28(4), pp. 451-482.
- Gouillart, F. & Hallett, T., 2015. *Co-creation in government*. In *Stanford Social Innovation Review*. [Online]
Available at: https://ssir.org/articles/entry/co_creation_in_government
[Accessed 16 March 2021].
- Grootjans, A., de Hullu, E. & Sevink, J., 2019. Onderwaterdrainage in veenweidegebieden: Is dat wel zo'n goed idee?. *Landschap*, 36(3), pp. 143-149.
- Hagman, K., Hirvikoski, T., Wollstén, P. & Äyväre, A., 2018. *Handbook for Co-creation*. Espoo: Espoon kaupunki.
- Handley, K., 2011. Non-Participant Observation. In: R. Thorpe & R. Holt, eds. *The SAGE Dictionary of Qualitative Management Research*. London: Sage, pp. 143-144.
- Hardyman, W., Daunt, K. & Kitchener, M., 2015. Value co-creation through patient engagement in health care: a micro-level approach and research agenda. *Public Management Review*, 17(1), pp. 90-107.
- Harkison, T., 2018. The use of co-creation within the luxury accommodation experience – myth or reality?. *International Journal of Hospitality Management*, Volume 71, pp. 11-18.
- Healey, P., 1992. Planning through debate: The communicative turn in planning theory. *The Town Planning Review*, 63(2), pp. 143-162.
- Healey, P., 1996. The communicative turn in planning theory and its implications for spatial strategy formation. *Environment and Planning B: Planning and design*, 23(2), pp. 217-234.
- Hunt, J. & Shackley, S., 1999. Reconceiving science and policy: academic, fiducial and bureaucratic knowledge. *Minerva*, 37(2), pp. 141-164.
- Hurlbert, M. & Gupta, J., 2015. The split ladder of participation: A diagnostic, strategic, and evaluation tool to assess when participation is necessary. *Environmental Science & Policy*, Volume 50, pp. 100-113.
- Joosten, H. et al., 2015. *MoorFutures®: integration of additional ecosystem services (including biodiversity) into carbon credits-standard, methodology and transferability to other regions*. 1st ed. Bonn: Bundesamt für Naturschutz (German Federal Agency for Nature Conservation).
- Karki, S., Elsgaard, L., Kandel, T. & Lærke, P., 2016. Carbon balance of rewetted and drained peat soils used for biomass production: a mesocosm study. *Gcb Bioenergy*, 8(5), pp. 969-980.
- Kelly, G., Mulgan, G. & Muers, S., 2002. *Creating public value*, London: Cabinet Office Strategy Unit.

- Kettl, D., 2015. *The transformation of governance: Public administration for the twenty-first century*. 2nd ed. Baltimore, Maryland: Johns Hopkins University Press.
- Koehn, D., 1995. Expertise and the delegitimation of professional authority. *American Behavioral Scientist*, 38(7), pp. 990-1002.
- Kumar, A. & Paddison, R., 2000. Trust and collaborative planning theory: The case of the Scottish planning system. *International planning studies*, 5(2), pp. 205-223.
- Lasker, R. & Weiss, E., 2003. Broadening participation in community problem solving: a multidisciplinary model to support collaborative practice and research. *Journal of Urban Health*, 80(1), pp. 14-47.
- Leendertse, W., Langbroek, M., Arts, J. & Nijhuis, A., 2016. Generating spatial quality through co-creation: experiences from the Blankenburgverbinding (the Netherlands). *Transportation Research Procedia*, Volume 14, pp. 402-411.
- Lester, J. N. & O'Reilly, M., 2019. Planning and Preparing for Data Collection in Applied Conversation Analysis Research. In: J. N. Lester & M. O'Reilly, eds. *Applied Conversation Analysis: Social Interaction in Institutional Settings*. Thousand Oaks: Sage, pp. 97-122.
- Longhurst, R., 2016. Semi-structured interviews and focus groups. In: N. Clifford, M. Cope, T. Gillespie & S. French, eds. *Key Methods in Geography*. 3rd ed. London: Sage, pp. 134-156.
- Meyerson, M. & Banfield, E., 1955. *Politics, Planning and the Public Interest; The case of public housing in Chicago*. New York: Free Press.
- Mylopoulos, J., 1992. Conceptual modelling and Telos. *Conceptual modelling, databases, and CASE: An integrated view of information system development*, pp. 49-68.
- Mylopoulos, M. & Regehr, G., 2007. Cognitive metaphors of expertise and knowledge: prospects and limitations for medical education. *Medical education*, 41(12), pp. 1159-1165.
- Noordegraaf, M., 2007. From "pure" to "hybrid" professionalism: Present-day professionalism in ambiguous public domains. *Administration & Society*, 39(6), pp. 761-785.
- Olsen, W., 2012. *Data collection: Key debates and methods in social research*. 1st ed. London: Sage.
- Open Kaart, 2020. *Informatiebijeenkomst Co creatie Hegewarren 10 november 2020*. [Online] Available at: https://www.youtube.com/watch?v=90uYa7Y_wa0 [Accessed 3 February 2021].
- Osborne, S. P., 2006. The New Public Governance?. *Public Management Review*, 8(3), pp. 377-387.
- Ostrom, E., 1996. Crossing the great divide: coproduction, synergy, and development. *World development*, 24(6), pp. 1073-1087.
- Otsuka, K., 2019. *Interactive approaches to water governance in Asia*. 1st ed. Singapore: Springer.
- Oxford Learner's Dictionaries, 2021. *Oxford Learner's Dictionaries*. [Online] Available at: <https://www.oxfordlearnersdictionaries.com/> [Accessed 17 March 2021].
- Özdemir, E., 2019. The role of the expert knowledge in politicizing urban planning processes: A case from Istanbul. *Planning Theory*, 18(2), pp. 237-259.

- Paasi, J. et al., 2010. Innovation management challenges of a system integrator in innovation networks. *International Journal of Innovation Management*, 14(6), pp. 1047-1064.
- Pelsma, T., Motelica-Wagenaar, A. & Troost, S., 2020. A social costs and benefits analysis of peat soil-subsidence towards 2100 in 4 scenarios. *Proceedings of the International Association of Hydrological Sciences*, Volume 382, pp. 669-675.
- Pestoff, V., 2018. Co-production at the crossroads of public administration regimes. In: T. Brandsen, T. Steen & B. Verschuere, eds. *Co-Production and Co-Creation*. New York: Routledge, pp. 27-36.
- Prahalad, C. & Ramaswamy, V., 2004. Co-creation experiences: The next practice in value creation. *Journal of interactive marketing*, 18(3), pp. 5-14.
- Pronger, J. et al., 2014. Subsidence rates of drained agricultural peatlands in New Zealand and the relationship with time since drainage. *Journal of Environmental Quality*, 43(4), pp. 1442-1449.
- Provincie Fryslân and Wetterskip Fryslân, 2021. *Veenweideprogramma 2021-2030: Foarút mei de Fryske Feangreiden*. [Online]
Available at: <https://www.veenweidefryslan.frl/uploads/vp-2021-2030-pdf/4107-veenweideprogramma-2021-2030-print-2-lr.pdf>
[Accessed 20 April 2021].
- Provincie Fryslân, 2019. *Startnotitie Gebiedsontwikkeling Hegewarren*. [Online]
Available at:
<https://www.fryslan.frl/document.php?m=7&fileid=66838&f=cc8761787e2e4550c25969017c3ff1a8&attachment=1>
[Accessed 26 November 2020].
- Provincie Fryslân, 2019. *Voorverkenning Kansrijkheid van een integrale gebiedsontwikkeling Hegewarren*. [Online]
Available at:
<https://www.fryslan.frl/document.php?m=7&fileid=66844&f=626854a6bdf32abe97bfe92ce7a840e7&attachment=1>
[Accessed 4 April 2021].
- Provincie Fryslân, 2020. *De romte diele Omgevingsvisie Fryslân 2020*. [Online]
Available at:
<https://www.fryslan.frl/document.php?m=1&fileid=75218&f=8504f2106afaa6ea8092a3b0b4208ee4&attachment=0&c=5236>
[Accessed 15 April 2021].
- Puerari, E. et al., 2018. Co-Creation dynamics in urban living labs. *Sustainability*, 10(6), p. 1893.
- Punch, K., 2014. *Introduction to social research: quantitative and qualitative approaches*. 3rd ed. London: Sage.
- Raad voor de leefomgeving en infrastructuur, 2020. *Stop bodemdaling in veenweidegebieden: het Groene Hart als voorbeeld*. [Online]
Available at:
https://www.rli.nl/sites/default/files/advies_stop_bodemdaling_in_veenweidegebieden_-_def.pdf
[Accessed 26 April 2021].

- Rădulescu, M., Leendertse, W. & Arts, J., 2020. Conditions for Co-Creation in Infrastructure Projects: Experiences from the Overdiepse Polder Project (The Netherlands). *Sustainability*, 12(18), p. 7736.
- Ramaswamy, V., 2011. It's about human experiences... and beyond, to co-creation. *Industrial Marketing Management*, 40(2), pp. 195-196.
- Ramaswamy, V. & Gouillart, F., 2010. *The power of co-creation: Build it with them to boost growth, productivity, and profits*. 1st ed. New York: Simon and Schuster.
- Rhodes, R., 2007. Understanding governance: Ten years on. *Organization studies*, 28(8), pp. 1243-1264.
- Rill, B. & Hämäläinen, M., 2018. *The Art of Co-Creation: A Guidebook for Practitioners..* Singapore: Springer.
- Rodriguez, A. et al., 2021. Soil carbon characterization in a subtropical drained peatland. *Geoderma*, Volume 382.
- Russo-Spena, T. & Mele, C., 2012. "Five Co-s" in innovating: a practice-based view. *Journal of Service Management*, 23(4), pp. 527-553.
- Salamon, L., 2002. *The tools of government: A guide to the new governance*. New York: Oxford University Press.
- Sanders, L. & Simons, G., 2009. A social vision for value co-creation in design. *Open Source Business Resource*, December 2009.
- Sayer, R., 1992. *Method in social science: A realist approach*. 2nd ed. London: Routledge.
- Schaefer, M. et al., 2021. Understanding Socio-Technological Systems Change through an Indigenous Community-Based Participatory Framework. *Sustainability*, 13(4), p. 2257.
- Schlappa, H. & Imani, Y., 2018. Who Is in the Lead? New Perspectives on Leading Service Co-Production. In: T. Brandsen, T. Steen & B. Verschuere, eds. *Co-production and co-creation: Engaging citizens in public services*. New York: Taylor & Francis, pp. 99-108.
- Sehested, K., 2002. How new public management reforms challenge the roles of professionals. *International Journal of Public Administration*, 25(12), pp. 1513-1537.
- Simpson, H. & De Loë, R., 2020. Challenges and opportunities from a paradigm shift in groundwater governance. *Hydrogeology Journal*, 28(2), pp. 467-476.
- Spit, T. & Zoete, P., 2003. *Gepland Nederland: een inleiding in ruimtelijke ordening en planologie*. Den Haag: Sdu Uitgevers.
- Steen, K. & Van Bueren, E., 2017. *Urban Living Labs: A living lab way of working*, Amsterdam: AMS Institute.
- Steen, T., Brandsen, T. & Verschuere, B., 2018. The dark side of co-creation and co-production. In: T. Brandsen, T. Steen & B. Verschuere, eds. *Co-Production and co-creation: Engaging citizens in public services*. New York: Taylor & Francis, pp. 284-293.
- Steen, T. & Tuurnas, S., 2018. The roles of the professional in co-production and co-creation processes. In: T. Brandsen, T. Steen & B. Verschuere, eds. *Co-production and co-creation: Engaging citizens in public services*. New York: Taylor & Francis, pp. 80-92.

- Stephens, J., Allen Jr, L. & Chen, E., 1984. Organic soil subsidence. *Reviews in Engineering Geology*, Volume 6, pp. 107-122.
- Stoker, G., 2006. Public value management: a new narrative for networked governance?. *The American review of public administration*, 36(1), pp. 41-57.
- Tashakkori, A. & Teddlie, C., 1998. *Mixed methodology: Combining qualitative and quantitative approaches*. 1st ed. Thousand Oaks: Sage.
- Taylor, I. & Kelly, J., 2006. Professionals, discretion and public sector reform in the UK: re-visiting Lipsky. *International Journal of Public Sector Management*, 19(7), pp. 629-642.
- Thomas, J., 2013. Citizen, customer, partner: Rethinking the place of the public in public management. *Public Administration Review*, 73(6), pp. 786-796.
- Tight, M., 2017. *Understanding case study research: Small-scale research with meaning*. London: Sage.
- Tight, M., 2019. *Documentary research in the social sciences*. 1st ed. London: Sage.
- Toekomst Hegewarren, 2021. *Het co-creatieteam*. [Online]
Available at: <https://toekomsthegewarten.frl/het-co-creatieteam/>
[Accessed 3 February 2021].
- Toekomst Hegewarren, 2021. *Nieuwsbrief #5 | Laat ons weten wat je van de conceptresultaten vindt!*. [Online]
Available at: <https://toekomsthegewarten.frl/nieuwsbrief-5-laait-ons-weten-wat-je-van-de-conceptresultaten-vindt/>
[Accessed 9 July 2021].
- Toekomst Hegewarren, 2021. *Opdracht en doel*. [Online]
Available at: <https://toekomsthegewarten.frl/opdracht-en-doel/>
[Accessed 3 February 2021].
- Toekomst Hegewarren, 2021. *Planning*. [Online]
Available at: <https://toekomsthegewarten.frl/planning/>
[Accessed 3 February 2021].
- Toekomst Hegewarren, 2021. *Wat is de beste toekomst voor de Hegewarren?*. [Online]
Available at: <https://toekomsthegewarten.frl/>
[Accessed 3 February 2021].
- Torfin, J., Sørensen, E. & Røiseland, A., 2016. Transforming the public sector into an arena for co-creation: Barriers, drivers, benefits, and ways forward. *Administration & Society*, 51(5), pp. 795-825.
- Tuurnas, S. et al., 2015. Coordinating co-production in complex network settings. *European Journal of Social Work*, 18(3), pp. 370-382.
- Valuta voor Veen, 2021. *Over ons*. [Online]
Available at: <https://valutavoorveen.nl/#home>
[Accessed 26 April 2021].
- Van Beek, C. et al., 2007. Leaching of solutes from an intensively managed peat soil to surface water. *Water, air, and soil pollution*, 182(1), pp. 291-301.

- Van Buuren, A. & Edelenbos, J., 2004. Conflicting knowledge. *Science and Public Policy*, 31(4), pp. 289-299.
- Van de Riet, B., Van Gerwen, R., Griffioen, H. & Hogeweg, N., 2014. *Vernatting voor veenbehoud : carbon credits & kansen voor paludicultuur en natte natuur in Noord-Holland*. 1st ed. Heiloo: Landschap Noord-Holland.
- van den Born, G. J. et al., 2016. *Dalende bodems, stijgende kosten: mogelijke maatregelen tegen veenbodemdaling in het landelijk en stedelijk gebied: beleidsstudie*, Den Haag: Planbureau voor de Leefomgeving.
- Voorberg, W., Bekkers, V. & Tummers, L., 2015. A systematic review of co-creation and co-production: Embarking on the social innovation journey. *Public management review*, 17(9), pp. 1333-1357.
- Warner, J., 2006. More sustainable participation? Multi-stakeholder platforms for integrated catchment management. *Water resources development*, 22(1), pp. 15-35.
- Wichtmann, W. & Joosten, H., 2007. Paludiculture: peat formation and renewable resources from rewetted peatlands. *IMCG Newsletter*, Volume 3, pp. 24-28.
- Woodhouse, E. J. & Nieuwma, D., 1997. When expert advice works, and when it does not. *IEEE Technology and Society Magazine*, 16(1), p. 23–29.
- Woodhouse, E. & Nieuwma, D., 2001. Democratic expertise: integrating knowledge, power, and participation. In: M. Hisschemöller, R. Hoppe, W. Dunn & J. Ravetz, eds. *Knowledge, power, and participation in environmental policy analysis*. New Brunswick: Transaction Publishers, pp. 73-96.
- Zuidema, C., 2016. *Decentralization in environmental governance; a postcontingency approach*. Abingdon: Routledge.

Appendix 1 – Changing planning

In theory, researchers noticed developments and changes in planning approaches and public administration. In this appendix, these developments are explained by referring to the planning spectrum between two ideal types of technical rationality and communicative rationality, and to the different types of public administration.

Technical and communicative rational approaches

In literature, some researchers associate a technical rational approach to situations with low complexity (see De Roo, 2003; De Roo, 2007; Zuidema, 2016). Generally, complexity implies change, uncertainty, and limited predictability (Duit & Galaz, 2008). Thus, in a technical rational approach there is stability, certainty, and predictability. Furthermore, with low complexity there is a high degree of agreement on the objectives that need to be achieved (Zuidema, 2016). During most of the 20th century, such an instrumental or technical-rational approach was dominant in spatial planning and public administrations (Zuidema, 2016). Certainty and control were considered important in planning practice after the Second World War to quickly rebuild (De Roo, 2007). This made technical rationality a desirable option as it is concerned with achieving a predefined end by selecting the most effective and efficient means (Zuidema, 2016). By knowing all the information available at the beginning of a planning process, a clear outcome could be defined and predictions about the results could be made (De Roo, 2007). In practice, according to Zuidema (2016) a technical rationale approach is related to a coordinative model of governance, in which the state decides – using knowledge from specialists – upon the goals that are considered beneficial for the public good.

In a society with increasing democratic and equity values a technical rational approach with absolute control is difficult to achieve (De Roo, 2007), and its critique was increasing as it became less suitable in a dynamic society (Spit & Zoete, 2003). Researchers such as De Roo (2007) and Zuidema (2016) see this increasing degree of complexity, characterized by interrelatedness, non-linearity, and dynamically interacting actors, as an argument for shifting away from a technical rational approach. In planning theory, around the 1990s these developments were noticed by scholars, resulting in a fundamental shift from technical rationality to communicative rationality (see among others Allmendinger, 2017; De Roo, 2007; De Roo, 2010; Healey, 1996). As such, planning should focus more on the 'external', and consequently since the 1980s and 1990s third parties were increasingly invited to the planning process (Spit & Zoete, 2003). Also, public-private partnerships became increasingly popular in planning in those periods. Decentralization processes came up to solve issues on the regional and local level, by for instance area-based approaches (De Roo, 2007). Communicative approaches became increasingly common as a response to the conclusion that one single entity was not able to satisfy the other parties involved anymore to control the physical environment with its available resources (De Roo, 2007). It became clear that planning is a communicative process, with different actors and views of reality (Spit & Zoete, 2003). Participation of local and regional actors became increasingly important (De Roo, 2007), which in literature is also referred to as a shift from 'government' to 'governance' (Spit & Zoete, 2003). According to Rhodes (2007), governance can be defined as governing with and by networks. Thus, beside public actors, also non-governmental parties are active, like private and voluntary parties (Rhodes, 2007).

According to Zuidema (2016), communicative rationality is considered as the meaning that is given to an action, and about considering appropriate actions by the actors involved instead of solving issues as efficiently and effectively as possible. In such a communicative approach, knowledge is being produced while decisions are made with rationality as a frame of reference (Zuidema, 2016). As technical rationality can be linked with object-oriented action, communicative rationality implies intersubjectively oriented action (Zuidema, 2016). Following the work of Habermas, inter-subjective

reasoning is required in finding agreement for addressing collective concerns (Healey, 1992). In such a process it is about collective sense-making, by interpreting, valuing, and connecting knowledge (Zuidema, 2016). Also, seeking trust would engage professionals with stakeholders in a communicative process, leading to increased shared understanding and mutually agreed upon decisions (Kumar & Paddison, 2000). As actors are interacting, difficulties and uncertainties can be evaluated. In this way, actors are collectively creating an understanding of a 'constructed' issue (De Roo, 2007). As a result of this interaction, a strategy for dealing with an issue can be collectively created (De Roo, 2007).

As complexity increases by having varying interests, ideas, and objectives in the process, Zuidema (2016) asserts that a more argumentative or competitive model of governance is needed instead of the more coordinative model which is applicable in a technical rational approach. Compromises can be made to develop a strategy or multiple objectives can be met by taking into account multiple objectives in the strategy (Zuidema, 2016). Zuidema (2016) also links this approach to area-based approaches as a response to inter-related policy issues, social fragmentation, and power dispersal. In such a decentralized and integrated area-based approach, the interests, goals, and knowledge are constructed and balanced by local actors during the process. Therefore Zuidema (2016) argues that stakeholders, their interests, and resources should be part of the process establishing which combinations are considered appropriate.

The aforementioned shift in planning has also been noticed by researchers in water management, with citizen involvement increasingly being implemented in complex water management projects (see Edelenbos, et al., 2010, 2011; Otsuka, 2019; Simpson & De Loë, 2020). As such, the traditional emphasis on expert knowledge is faced with competition from the local knowledge of citizens (Edelenbos, et al., 2010). In the Hegewarren project these different types of knowledge are present as governmental organizations, consultancy firms, and residents are involved in the process; this implies that both technical and communicative characteristics are present in the project.

Administration types

Compared to the shift from technical rationality to communicative rationality, a similar shift is noticed in literature regarding public administration types in the Western world. The form of public administration – that is known as the traditional form – arose in the beginning of the 20th century in the United States (Bryson, et al., 2014). It matured in the mid-twentieth century as a response to important developments in that time, like industrialization, urbanization, and faith in science. Furthermore, events like the two world wars and periods of depression in-between and afterwards helped to solidify support for and trust in this traditional mode of public administration (Bryson, et al., 2014). This approach draws on a Weberian perception of the world in which political leadership and bureaucracy are seen as essential institutions in coping with complexity and delivering order to the governance process (Stoker, 2006). In this approach public participation takes place by voting in elections, and the public interest is defined by politicians and experts (Kelly, et al., 2002). In an idealized form of public administration elected officials determined the objectives, and technical experts had to refine these objectives in order to proceed into a political direction (Salamon, 2002). In this way, decisions were made unilaterally by relying on experts (Futrell, 2003). In such a hierarchical and bureaucratic setting, efficiency was key in delivering government services (see Bryson, et al., 2014; Salamon, 2002).

After increasing government failures, beliefs in efficacy and efficiency of the market, a belief in economic rationality, and increasing calls for decentralization and privatization, New Public Management became the dominant public administration mode in the Western world in the 1980s and 1990s (Bryson, et al., 2014). In this approach, government services are preferably delivered in the most efficient and effective way by markets and competition (Bryson, et al., 2014). Incentives and tools

are developed to influence and fragment monopolistic public service structures (Stoker, 2006). Beside interpreting the public opinion, the role of politicians and public managers in this approach is to define and set performance targets in contracts (Stoker, 2006). Such contracts are used to steer the private sector as executing party in the delivery of public services (Kelly, et al., 2002).

New challenges have emerged focusing not only on how to manage, but also on how to govern in increasingly diverse and complex societies with complex problems (see Kettl, 2015; Osborne, 2006). The mode of public administration to respond to these challenges is in theory defined, among others as New Public Service (Denhardt & Denhardt, 2000), Public Value Management (Stoker, 2006), and New Public Governance (Osborne, 2006). In this new approach, public value is seen as emerging from broadly inclusive dialogue and deliberation, in which members from multiple sectors are included in the process (Bryson, et al., 2014). Also the role of citizens is extended beyond voters, customers, and clients towards problem solvers, co-creators, and governors to engage in the process of delivering public services (Briggs, 2008). Therefore, by this public deliberation, individual and public preferences are important in assessing the delivered output (Kelly, et al., 2002). In this administration type, the role of the manager has shifted towards steering networks of deliberation to help maintain and enhance the system's effectiveness, capacity, and accountability (see Bryson, et al., 2014; Kelly, et al., 2002; Stoker, 2006). According to Stoker (2006), dialogue is considered as important in this approach, as it is a continuous process of democratic exchange in a setting with a wide range of legitimate stakeholders. Bryson, et al. (2014) concluded that government agencies need to be able to be both steering and rowing, as their roles can vary throughout the process between for example conveners, catalysts, and collaborators.

New Public Governance does however not seem to have much purchasing power among public sector professionals, possibly due to 'paradigm fatigue' as Torfing, et al. (2016) concluded. Contrastingly, in the last years the concept of co-creation has started to flourish in many countries, as a form of public service production and policymaking (Torfing, et al., 2016). Co-creation emphasizes on collaborative interaction in networks and has therefore overlap with the core aspects of New Public Governance (Torfing, et al., 2016). The aim of New Public Governance is to transform the public sector's way of governing from a service provider towards a way in which an arena for co-creation is created (Bovaird & Loeffler, 2012). In such an arena, professionals from public organizations and consultancy firms are required to collaborate across institutional boundaries, with citizens, Non-Governmental Organizations (hereafter: NGOs), and private firms (Torfing, et al., 2016).

Appendix 2 – Interview guides

Interview guide project manager/client

Intro	Geïnterviewde wordt bedankt voor het meedoen aan het interview.
Own introduction	Student Environmental and Infrastructure Planning Masterscriptie Veenproblemen → Hegewarren → co-creatie Maria → samen interviews
Topic and goal of the research	<p>Het doel van mijn onderzoek is om te kijken wat de rol van experts is in co-creatie processen. Hierbij richt ik mij op hoe de experts het beste hun kennis kunnen gebruiken en overdragen aan de anderen in het proces, zodat het bijdraagt aan het project en dat het wordt gewaardeerd door de andere betrokkenen. Verder onderzoek ik hoe de interactie tussen de betrokkenen verloopt en hoe de verschillende soorten kennis bijdragen aan het proces. Maria richt zich vooral op het proces, hoe de interactie verloopt en wat voor invloed de interactie heeft op het verloop van het proces (bijvoorbeeld iteratierondes, loops).</p> <p>Op basis van de theorie (artikelen) is er allerlei informatie vergaard over co-creatie en de verschillende interacties en rollen die hierin plaats kunnen vinden. Daar zijn de interviewvragen op gebaseerd.</p>
Anonymity	De geïnterviewde wordt medegedeeld dat de inhoud van het interview alleen wordt gebruikt voor de onderzoeken van Maria en mijzelf en dat informatie niet te traceren is. Ook wordt de identiteit niet vermeld.
Stopping + not answering	Ook kan het interview op elk moment worden gestopt indien gewenst en vragen mogen worden overgeslagen als de geïnterviewde dat wil.
Length of the interview	Het interview zal ongeveer 45-60 minuten duren.
Recording	De geïnterviewde wordt gevraagd of het akkoord is dat het wordt opgenomen. Dit geeft de mogelijkheid om het terug te luisteren en vervolgens beter te kunnen analyseren. Verder wordt het consentformulier wordt besproken.
Introducing questions	
1	Wat is uw functie en hoe bent u betrokken bij het project?
2	Heeft u aan vergelijkbare projecten gewerkt? - Waarom hebt u besloten aan dit project deel te nemen?
Main questions	
3	Wat vindt u van co-creatieprocessen in ruimtelijke ordening in het algemeen? - Waarom heeft de Provincie gekozen voor co-creatie als projectvorm voor het project? - Hoe verschilt dit project van andere projecten?
4	Geven de overeenkomsten/contracten genoeg ruimte voor flexibiliteit in het project? - Had/heeft u genoeg tijd beschikbaar om extra tijd in het project te steken?

	<ul style="list-style-type: none"> - Waren er contractuele problemen/moeilijkheden in het project?
5	<p>Wat beschouwde u vooraf als de grootste uitdagingen van het project?</p> <ul style="list-style-type: none"> - Zijn deze uitdagingen aanwezig geweest in het project? - Welke andere uitdagingen/hindernissen waren aanwezig in het project? - Was het proces beperkt door de vooropgestelde ontwerpeisen (zoals vaarroute)? → Zo ja, kon dit worden voorkomen? - Wordt het project gehinderd doordat het online moet plaatsvinden? → Zou het ook positief kunnen bijdragen aan het project?
6	<p>Was er een vooraf bepaalde structuur en plan voor het co-creatie proces? → Waar bestond dit uit en waarom?</p> <ul style="list-style-type: none"> - Is er genoeg ruimte voor interactie/discussie in de workshops? - Was er naast de interactie in de workshops ook nog interactie met de betrokkenen buiten de workshops? (Formeel/informeel) → Hoe werd dit meegenomen in het proces? - Wat is de invloed van de interacties tussen actoren (experts, klant en participanten) op het co-creatieproces? (Structuur) → opent dit de ruimte voor co-creatie of juist niet?
7	<p>Hoe beschrijft u uw rol in het project?</p> <ul style="list-style-type: none"> - Denkt u dat de betrokkenen vrij kunnen spreken in de workshops? → Zo ja, waarom? Zo nee, waarom? - Ervaart u wederzijds vertrouwen tussen de betrokkenen in het proces? - Is er genoeg ruimte voor interactie en discussie in de workshops?
8	<p>Welke belangen spelen er bij de verschillende actoren?</p> <ul style="list-style-type: none"> - Denkt u dat alle participanten akkoord kunnen gaan met beslissingen die worden gemaakt in het project? - Denkt u dat participanten eerder geneigd zijn besluiten te accepteren als hier expertkennis bij wordt gebruikt?
9	<p>Hoe beschrijft u de rol van experts in het project?</p> <ul style="list-style-type: none"> - Zijn de experts in staat om voldoende antwoorden te geven in de workshops? → Hoe kan dit worden verbeterd? - Denkt u dat de experts als legitiem worden beschouwd door de andere betrokkenen? (Dat hun informatie en toevoeging als juist wordt gezien) - Is de bijdrage van de experts effectief? → Zo ja, waarom? Zo nee, waarom niet? - Hoe kunnen ze meer effectief zijn?
10	<p>Hoe beschrijft u de rol van lokale kennis in het project?</p> <ul style="list-style-type: none"> - Hoe is de kennis van experts verweven met de lokale kennis? (→ Hoe gaan experts met deze lokale kennis om?)

11	<p>Hoe beleeft u de interactie tussen experts en de andere betrokkenen in het project?</p> <ul style="list-style-type: none"> - Denkt u dat deze interactie voor beide kanten genoeg voldoening geeft?
12	<p>Aan het einde van het proces zijnde, wat is uw reflectie op de interactie tussen de verschillende lagen (van provincie, NGOs, lokale mensen)?</p> <ul style="list-style-type: none"> - En tussen verschillende sectoren? - Hadden deze actoren veel invloed op het vormen en hervormen van het proces? → Hoe beleefde u dit en hoe reageerde u hierop? - Denkt u dat de juiste partijen zijn uitgenodigd in het project? - Terugkijkend op het proces, hoe beschrijft u de structuur van het proces? (Fasen, loops, iteratief, sequentieel) - Welke leerpunten m.b.t. het co-creatieproces zijn er te trekken uit dit project? - Als u achteraf gezien iets zou mogen veranderen in het project, wat zou het zijn? - Als u in de toekomst een vergelijkbaar project zou uitvoeren, zou u dan opnieuw een soortgelijk co-creatieproces toepassen? → Zo ja, waarom? Zo nee, waarom? - Meer generiek over co-creatie, wat zijn 3 do's en 3 don'ts? (3 dingen die je absoluut wel en niet moet doen in co-creatieprocessen)
Closing questions	
	Is er iets wat ik niet heb gevraagd, maar u nog zou willen zeggen?
	Heeft u opmerkingen/aanmerkingen voor de interviews die nog komen?
	Zijn er nog belangrijke documenten of relevante personen die geraadpleegd of geïnterviewd kunnen worden?
End remarks	
Next proceedings	<p>De opname zal worden uitgetypt en het wordt gebruikt in het beantwoorden van de onderzoeksvragen.</p> <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de transcriptie wil ontvangen. - Omdat Maria haar onderzoek wat langer doorloopt, kan het zijn dat ze later nog eens contact opneemt voor wat extra vragen. De geïnterviewde wordt gevraagd of dat goed is.
Thanking	De geïnterviewde wordt bedankt voor zijn/haar tijd.
Contact information	<p>Contactinformatie wordt uitgewisseld als dit nog niet is gedaan.</p> <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de scriptie wil lezen zodra het af is.

Interview guide residents and NGOs

Intro	Geïnterviewde wordt bedankt voor het meedoen aan het interview.
Own introduction	Student Environmental and Infrastructure Planning Masterscriptie Veenproblemen → Hegewarren → co-creatie Maria → samen interviews
Topic and goal of the research	Het doel van mijn onderzoek is om te kijken wat de rol van experts is in co-creatie processen. Hierbij richt ik mij op hoe de experts het beste hun kennis kunnen gebruiken en overdragen aan de anderen in het proces, zodat het bijdraagt aan het project en dat het wordt gewaardeerd door de andere betrokkenen. Verder onderzoek ik hoe de interactie tussen de betrokkenen verloopt en hoe de verschillende soorten kennis bijdragen aan het proces. Maria richt zich vooral op het proces, hoe de interactie verloopt en wat voor invloed de interactie heeft op het verloop van het proces (bijvoorbeeld iteratierondes, loops). Op basis van de theorie (artikelen) is er allerlei informatie vergaard over co-creatie en de verschillende interacties en rollen die hierin plaats kunnen vinden. Daar zijn de interviewvragen op gebaseerd.
Anonymity	De geïnterviewde wordt medegedeeld dat de inhoud van het interview alleen wordt gebruikt voor de onderzoeken van Maria en mijzelf en dat informatie niet te traceren is. Ook wordt de identiteit niet vermeld.
Stopping + not answering	Ook kan het interview op elk moment worden gestopt indien gewenst en vragen mogen worden overgeslagen als de geïnterviewde dat wil.
Length of the interview	Het interview zal ongeveer 45-60 minuten duren.
Recording	De geïnterviewde wordt gevraagd of het akkoord is dat het wordt opgenomen. Dit geeft de mogelijkheid om het terug te luisteren en vervolgens beter te kunnen analyseren. Verder wordt het consentformulier wordt besproken.
Introducing questions	
1	Hoe bent u betrokken bij het project, en wat is uw belang in het project?
2	Heeft u al eens aan soortgelijke projecten meegewerkt? - Zo ja, wat was het grootste verschil met dit project?
Main questions	
3	Wat vindt u van co-creatieprocessen in ruimtelijke ordening in het algemeen? - Denkt u dat co-creatie geschikt is voor dit project? → Zo ja, waarom? Zo nee, waarom?
4	Hoe uitte u uw belang in het project? - Voelde u zich voldoende gehoord in het project? - Kon u vrij spreken in het project?
5	Hoe ziet u terug op de interactie tijdens het proces? - Werd het project gehinderd doordat het online moest plaatsvinden?

	<ul style="list-style-type: none"> - Had u het idee dat er wederzijds vertrouwen was in de workshops? - Was er genoeg ruimte voor discussie en interactie tijdens de workshops?
6	Denkt u dat de juiste partijen zijn uitgenodigd in het project? <ul style="list-style-type: none"> - Zo ja, waarom? - Zo nee, waarom?
7	Welke beperkingen/hindernissen zag u in het co-creatieproces? <ul style="list-style-type: none"> - Was het proces beperkt door de vooropgestelde ontwerpeisen (zoals vaarroute)? → Zo ja, kon dit worden voorkomen?
8	Hoe ziet u de rol van experts in het project? (Uitleggen wie experts zijn) <ul style="list-style-type: none"> - Is dit ook wat u vooraf had verwacht van de experts?
9	Bent u tevreden met de bijdrage van experts in het project? → Hoe kon dit worden verbeterd? <ul style="list-style-type: none"> - Hoe ervaarde u de interactie met de experts? → Hoe kon dit worden verbeterd? - Waren de experts voldoende in staat om de vragen te beantwoorden in de workshops? → Hoe kon dit worden verbeterd? - Vond u de experts effectief in het project? → Hoe kon dit worden verbeterd?
10	Is uw lokale kennis goed tot zijn recht gekomen in het proces? <ul style="list-style-type: none"> - Hoe kon dit worden verbeterd? - Heeft u het idee dat de lokale kennis in project goed wordt opgenomen door de experts?
11	Als u achteraf gezien iets zou mogen veranderen in het project, wat zou het zijn?
Closing questions	
	Is er iets wat ik niet heb gevraagd, maar u nog zou willen zeggen?
	Heeft u opmerkingen/aanmerkingen voor de interviews die nog komen?
	Zijn er nog belangrijke documenten of relevante personen die geraadpleegd of geïnterviewd kunnen worden?
End remarks	
Next proceedings	De opname zal worden uitgetypt en het wordt gebruikt in het beantwoorden van de onderzoeksvragen. <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de transcriptie wil ontvangen. - Omdat Maria haar onderzoek wat langer doorloopt, kan het zijn dat ze later nog eens contact opneemt voor wat extra vragen. De geïnterviewde wordt gevraagd of dat goed is.
Thanking	De geïnterviewde wordt bedankt voor zijn/haar tijd.
Contact information	Contactinformatie wordt uitgewisseld als dit nog niet is gedaan. <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de scriptie wil lezen zodra het af is.

Interview guide experts (H+N+S and RHDHV)

Intro	Geïnterviewde wordt bedankt voor het meedoen aan het interview.
Own introduction	Student Environmental and Infrastructure Planning Masterscriptie Veenproblemen → Hegewarren → co-creatie Maria → samen interviews
Topic and goal of the research	Het doel van mijn onderzoek is om te kijken wat de rol van experts is in co-creatie processen. Hierbij richt ik mij op hoe de experts het beste hun kennis kunnen gebruiken en overdragen aan de anderen in het proces, zodat het bijdraagt aan het project en dat het wordt gewaardeerd door de andere betrokkenen. Verder onderzoek ik hoe de interactie tussen de betrokkenen verloopt en hoe de verschillende soorten kennis bijdragen aan het proces. Maria richt zich vooral op het proces, hoe de interactie verloopt en wat voor invloed de interactie heeft op het verloop van het proces (bijvoorbeeld iteratierondes, loops). Op basis van de theorie (artikelen) is er allerlei informatie vergaard over co-creatie en de verschillende interacties en rollen die hierin plaats kunnen vinden. Daar zijn de interviewvragen op gebaseerd.
Anonymity	De geïnterviewde wordt medegedeeld dat de inhoud van het interview alleen wordt gebruikt voor de onderzoeken van Maria en mijzelf en dat informatie niet te traceren is. Ook wordt de identiteit niet vermeld.
Stopping + not answering	Ook kan het interview op elk moment worden gestopt indien gewenst en vragen mogen worden overgeslagen als de geïnterviewde dat wil.
Length of the interview	Het interview zal ongeveer 45-60 minuten duren.
Recording	De geïnterviewde wordt gevraagd of het akkoord is dat het wordt opgenomen. Dit geeft de mogelijkheid om het terug te luisteren en vervolgens beter te kunnen analyseren. Verder wordt het consentformulier wordt besproken.
Introducing questions	
1	Wat is uw functie en hoe bent u betrokken bij het project?
2	Heeft u aan vergelijkbare projecten gewerkt? - Zo ja, in hoeverre was dat anders dan dit project? - Waarom hebt u besloten aan dit project deel te nemen?
Main questions	
3	Wat vindt u van co-creatieprocessen in ruimtelijke ordening in het algemeen? - Denkt u dat co-creatie geschikt is voor dit project? → Zo ja, waarom? Zo nee, waarom?
4	Geven de overeenkomsten/contracten genoeg ruimte voor flexibiliteit in het project? - Had/heeft u genoeg tijd beschikbaar om extra tijd in het project te steken? - Waren er contractuele problemen/moeilijkheden in het project?

5	<p>Welke beperkingen waren er gaandeweg in het project?</p> <ul style="list-style-type: none"> - Was het proces beperkt door de vooropgestelde ontwerpeisen (zoals vaarroute)? → Zo ja, kon dit worden voorkomen? - Wordt het project gehinderd doordat het online moet plaatsvinden?
6	<p>Hoe beschrijft u uw rol in het project?</p> <ul style="list-style-type: none"> - Is deze rol ook veranderd tijdens het project? - Wat voor soort kennis/expertise heeft u in het project gebracht, en op welk moment? - Heeft u het idee dat u vrij kan spreken in de workshops? - Komt u enige hindernissen tegen in het communiceren in de workshops? - Is er genoeg ruimte voor interactie en discussie in de workshops? - Ervaart u wederzijds vertrouwen tussen de betrokkenen in het proces?
7	<p>Denkt u dat alle participanten akkoord kunnen gaan met beslissingen die worden gemaakt in het project?</p> <ul style="list-style-type: none"> - Denkt u dat participanten eerder geneigd zijn besluiten te accepteren als hier expertkennis bij wordt gebruikt?
8	<p>Vindt u uw bijdrage aan het project effectief?</p> <ul style="list-style-type: none"> - Zo ja, waarom? Zo nee, waarom niet? - Hoe had uw bijdrage effectiever kunnen zijn?
9	<p>Denkt u dat u en de andere experts als legitiem worden beschouwd door de andere betrokkenen? (Dat hun informatie en toevoeging als juist wordt gezien)</p>
10	<p>Hoe beleeft u de interactie met de andere betrokkenen?</p> <ul style="list-style-type: none"> - Vindt u dat u voldoende antwoorden kon geven op de gestelde vragen in de workshops?
11	<p>Hoe beschrijft u de rol van lokale kennis in het project?</p> <ul style="list-style-type: none"> - Hoe is de kennis van experts verweven met de lokale kennis? (→ Hoe gaan experts met deze lokale kennis om?)
12	<p>Terugkijkend op het proces, hoe beschrijft u de structuur van het proces? (Fasen, loops, iteratief, sequentieel)</p> <ul style="list-style-type: none"> - Denkt u dat de juiste partijen zijn uitgenodigd in het project? - Als u achteraf gezien iets zou mogen veranderen in het project, wat zou het zijn? - Wat zijn de meest belangrijke dingen (leerpunten) die u meeneemt uit dit project en die u zou toepassen als u opnieuw bij een soortgelijk co-creatieproces betrokken zou zijn?
Closing questions	
	Is er iets wat ik niet heb gevraagd, maar u nog zou willen zeggen?
	Heeft u opmerkingen/aanmerkingen voor de interviews die nog komen?
	Zijn er nog belangrijke documenten of relevante personen die geraadpleegd of geïnterviewd kunnen worden?

End remarks	
Next proceedings	<p>De opname zal worden uitgetypt en het wordt gebruikt in het beantwoorden van de onderzoeksvragen.</p> <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de transcriptie wil ontvangen. - Omdat Maria haar onderzoek wat langer doorloopt, kan het zijn dat ze later nog eens contact opneemt voor wat extra vragen. De geïnterviewde wordt gevraagd of dat goed is.
Thanking	De geïnterviewde wordt bedankt voor zijn/haar tijd.
Contact information	<p>Contactinformatie wordt uitgewisseld als dit nog niet is gedaan.</p> <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de scriptie wil lezen zodra het af is.

Interview guide facilitator (Open Kaart)

Intro	Geïnterviewde wordt bedankt voor het meedoen aan het interview.
Own introduction	Student Environmental and Infrastructure Planning Masterscriptie Veenproblemen → Hegewarren → co-creatie Maria → samen interviews
Topic and goal of the research	Het doel van mijn onderzoek is om te kijken wat de rol van experts is in co-creatie processen. Hierbij richt ik mij op hoe de experts het beste hun kennis kunnen gebruiken en overdragen aan de anderen in het proces, zodat het bijdraagt aan het project en dat het wordt gewaardeerd door de andere betrokkenen. Verder onderzoek ik hoe de interactie tussen de betrokkenen verloopt en hoe de verschillende soorten kennis bijdragen aan het proces. Maria richt zich vooral op het proces, hoe de interactie verloopt en wat voor invloed de interactie heeft op het verloop van het proces (bijvoorbeeld iteratierondes, loops). Op basis van de theorie (artikelen) is er allerlei informatie vergaard over co-creatie en de verschillende interacties en rollen die hierin plaats kunnen vinden. Daar zijn de interviewvragen op gebaseerd.
Anonymity	De geïnterviewde wordt medegedeeld dat de inhoud van het interview alleen wordt gebruikt voor de onderzoeken van Maria en mijzelf en dat informatie niet te traceren is. Ook wordt de identiteit niet vermeld.
Stopping + not answering	Ook kan het interview op elk moment worden gestopt indien gewenst en vragen mogen worden overgeslagen als de geïnterviewde dat wil.
Length of the interview	Het interview zal ongeveer 45-60 minuten duren.
Recording	De geïnterviewde wordt gevraagd of het akkoord is dat het wordt opgenomen. Dit geeft de mogelijkheid om het terug te luisteren en vervolgens beter te kunnen analyseren. Verder wordt het consentformulier wordt besproken.
Introducing questions	
1	Wat is uw functie en hoe bent u betrokken bij het project?
2	Heeft u aan vergelijkbare projecten gewerkt? - Zo ja, in hoeverre was dat anders dan dit project? - Waarom hebt u besloten aan dit project deel te nemen?
Main questions	
3	Wat vindt u van co-creatieprocessen in ruimtelijke ordening in het algemeen? - Denkt u dat co-creatie geschikt is voor dit project? → Zo ja, waarom? Zo nee, waarom?
4	Geven de overeenkomsten/contracten genoeg ruimte voor flexibiliteit in het project? - Had/heeft u genoeg tijd beschikbaar om extra tijd in het project te steken? - Waren er contractuele problemen/moeilijkheden in het project?

5	<p>Was er een vooraf bepaalde structuur en plan voor het co-creatie proces? → Waar bestond dit uit en waarom?</p> <ul style="list-style-type: none"> - Welke beperkingen waren er gaandeweg in het project? - Was het proces beperkt door de vooropgestelde ontwerpeisen (zoals vaarroute)? → Zo ja, kon dit worden voorkomen? - Wordt het project gehinderd doordat het online moet plaatsvinden? - Is er genoeg ruimte voor interactie/discussie in de workshops? - Ervaart u wederzijds vertrouwen tussen de betrokkenen in het proces? - Was er naast de interactie in de workshops ook nog interactie met de betrokkenen buiten de workshops? (Formeel/informeel) → Hoe werd dit meegenomen in het proces? - Wat is de invloed van de interacties tussen actoren (experts, klant en participanten) op het co-creatieproces? (Structuur) → opent dit de ruimte voor co-creatie of juist niet?
6	<p>Hoe beschrijft u uw rol in het project?</p> <ul style="list-style-type: none"> - Heeft u het idee dat u vrij kan spreken in de workshops? - Komt u enige hindernissen tegen in het communiceren in de workshops?
7	<p>Welke belangen spelen er bij de verschillende actoren in het project?</p> <ul style="list-style-type: none"> - Denkt u dat alle participanten akkoord kunnen gaan met beslissingen die worden gemaakt in het project? - Denkt u dat participanten eerder geneigd zijn besluiten te accepteren als hier expertkennis bij wordt gebruikt?
8	<p>Hoe beschrijft u de rol van experts in het project?</p> <ul style="list-style-type: none"> - Zijn de experts in staat om voldoende antwoorden te geven in de workshops? → Hoe kan dit worden verbeterd? - Denkt u dat de experts als legitiem worden beschouwd door de andere betrokkenen? (Dat hun informatie en toevoeging als juist wordt gezien) - Is de bijdrage van de experts effectief? → Zo ja, waarom? Zo nee, waarom niet? - Hoe kunnen ze meer effectief zijn?
9	<p>Hoe beschrijft u de rol van lokale kennis in het project?</p> <ul style="list-style-type: none"> - Hoe is de kennis van expert verweven met de lokale kennis? (→ Hoe gaan experts met deze lokale kennis om?)
10	<p>Hoe beleeft u de interactie tussen experts en de andere betrokkenen in het project?</p> <ul style="list-style-type: none"> - Denkt u dat deze interactie voor beide kanten genoeg voldoening geeft?
11	<p>Aan het einde van het proces zijnde, wat is uw reflectie op de interactie tussen de verschillende lagen (van provincie, NGOs, lokale mensen)?</p> <ul style="list-style-type: none"> - En tussen verschillende sectoren?

	<ul style="list-style-type: none"> - Hadden deze actoren veel invloed op het vormen en hervormen van het proces? → Hoe beleefde u dit en hoe reageerde u hierop? - Denkt u dat de juiste partijen zijn uitgenodigd in het project? - Terugkijkend op het proces, hoe beschrijft u de structuur van het proces? (Fasen, loops, iteratief, sequentieel) - Welke leerpunten m.b.t. het co-creatieproces zijn er te trekken uit dit project? - Als u achteraf gezien iets zou mogen veranderen in het project, wat zou het zijn? - Meer generiek over co-creatie, wat zijn 3 do's en 3 don'ts? (3 dingen die je absoluut wel en niet moet doen in co-creatieprocessen)
Closing questions	
	Is er iets wat ik niet heb gevraagd, maar u nog zou willen zeggen?
	Heeft u opmerkingen/aanmerkingen voor de interviews die nog komen?
	Zijn er nog belangrijke documenten of relevante personen die geraadpleegd of geïnterviewd kunnen worden?
End remarks	
Next proceedings	<p>De opname zal worden uitgetypt en het wordt gebruikt in het beantwoorden van de onderzoeksvragen.</p> <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de transcriptie wil ontvangen. - Omdat Maria haar onderzoek wat langer doorloopt, kan het zijn dat ze later nog eens contact opneemt voor wat extra vragen. De geïnterviewde wordt gevraagd of dat goed is.
Thanking	De geïnterviewde wordt bedankt voor zijn/haar tijd.
Contact information	<p>Contactinformatie wordt uitgewisseld als dit nog niet is gedaan.</p> <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de scriptie wil lezen zodra het af is.

Interview guide co-creation expert (Adviescommissie)

Intro	Geïnterviewde wordt bedankt voor het meedoen aan het interview.
Own introduction	Student Environmental and Infrastructure Planning Masterscriptie Veenproblemen → Hegewarren → co-creatie Maria → samen interviews
Topic and goal of the research	<p>Het doel van mijn onderzoek is om te kijken wat de rol van experts is in co-creatie processen. Hierbij richt ik mij op hoe de experts het beste hun kennis kunnen gebruiken en overdragen aan de anderen in het proces, zodat het bijdraagt aan het project en dat het wordt gewaardeerd door de andere betrokkenen. Verder onderzoek ik hoe de interactie tussen de betrokkenen verloopt en hoe de verschillende soorten kennis bijdragen aan het proces. Maria richt zich vooral op het proces, hoe de interactie verloopt en wat voor invloed de interactie heeft op het verloop van het proces (bijvoorbeeld iteratierondes, loops).</p> <p>Op basis van de theorie (artikelen) is er allerlei informatie vergaard over co-creatie en de verschillende interacties en rollen die hierin plaats kunnen vinden. Daar zijn de interviewvragen op gebaseerd.</p>
Anonymity	De geïnterviewde wordt medegedeeld dat de inhoud van het interview alleen wordt gebruikt voor de onderzoeken van Maria en mijzelf en dat informatie niet te traceren is. Ook wordt de identiteit niet vermeld.
Stopping + not answering	Ook kan het interview op elk moment worden gestopt indien gewenst en vragen mogen worden overgeslagen als de geïnterviewde dat wil.
Length of the interview	Het interview zal ongeveer 45-60 minuten duren.
Recording	De geïnterviewde wordt gevraagd of het akkoord is dat het wordt opgenomen. Dit geeft de mogelijkheid om het terug te luisteren en vervolgens beter te kunnen analyseren. Verder wordt het consentformulier wordt besproken.
Introducing questions	
1	Wat is uw functie en hoe bent u betrokken bij het project?
2	Wat is uw affiniteit met co-creatie projecten?
Main questions	
3	Hoe zou u co-creatie definiëren?
4	Wat ziet u als de voornaamste verschillen tussen projecten met co-creatie en andere (meer reguliere) projecten?
5	<p>Wat ziet u als de voornaamste uitdagingen in co-creatie processen?</p> <ul style="list-style-type: none"> - Wordt een co-creatie project ook negatief beïnvloed als het online plaats moet vinden?
6	<p>Wat is uw kijk op het co-creatieproces in het Hegewarren project?</p> <ul style="list-style-type: none"> - Denkt u dat de juiste partijen zijn uitgenodigd in het project? - Hoe beschrijft u de structuur van het proces? (Fasen, loops, iteratief, sequentieel)

7	<p>Welke vragen zijn bij jullie binnengekomen over het Hegewarren project?</p> <ul style="list-style-type: none"> - Hoe zijn jullie hiermee omgegaan? - Hoe werd jullie advies ontvangen? - Hoe heeft dit het project beïnvloed?
8	<p>Hoe zou u de rol van experts in co-creatie projecten beschrijven?</p> <ul style="list-style-type: none"> - Hoe verschilt dit van andere (meer reguliere) projecten? - Hoe kan expertkennis het best worden ingezet in co-creatie projecten? - Hoe verschilt het in effectiviteit? - Hoe verschilt het in legitimiteit? - Hoe verschilt het in autonomie?
9	Denkt u dat participanten eerder geneigd zijn besluiten te accepteren als hier expertkennis bij wordt gebruikt?
10	<p>Hoe beschrijft u de rol van lokale kennis in co-creatie projecten?</p> <ul style="list-style-type: none"> - Hoe zou deze kennis het beste tot zijn recht komen in co-creatie projecten?
11	<p>Hoe ziet u de interactie tussen expertkennis en lokale kennis in co-creatie projecten?</p> <ul style="list-style-type: none"> - Hoe kunnen deze twee typen kennis het beste worden verweven?
12	<p>Met uw blik op het proces, hoe beschrijft u de structuur van het proces? (Fasen, loops, iteratief, sequentieel)</p> <ul style="list-style-type: none"> - Welke leerpunten denkt u dat er te trekken zijn uit dit co-creatieproces? (Zowel voor u als voor het co-creatieteam)
Closing questions	
	Is er iets wat ik niet heb gevraagd, maar u nog zou willen zeggen?
	Heeft u opmerkingen/aanmerkingen voor de interviews die nog komen?
	Zijn er nog belangrijke documenten of relevante personen die geraadpleegd of geïnterviewd kunnen worden?
End remarks	
Next proceedings	<p>De opname zal worden uitgetypt en het wordt gebruikt in het beantwoorden van de onderzoeksvragen.</p> <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de transcriptie wil ontvangen. - Omdat Maria haar onderzoek wat langer doorloopt, kan het zijn dat ze later nog eens contact opneemt voor wat extra vragen. De geïnterviewde wordt gevraagd of dat goed is.
Thanking	
Contact information	<p>Contactinformatie wordt uitgewisseld als dit nog niet is gedaan.</p> <p>De geïnterviewde wordt gevraagd of hij/zij de scriptie wil lezen zodra het af is.</p>

Interview guide project manager (representing the consultancy firms)

Intro	Geïnterviewde wordt bedankt voor het meedoen aan het interview.
Own introduction	Student Environmental and Infrastructure Planning Masterscriptie Veenproblemen → Hegewarren → co-creatie Maria → samen interviews
Topic and goal of the research	Het doel van mijn onderzoek is om te kijken wat de rol van experts is in co-creatie processen. Hierbij richt ik mij op hoe de experts het beste hun kennis kunnen gebruiken en overdragen aan de anderen in het proces, zodat het bijdraagt aan het project en dat het wordt gewaardeerd door de andere betrokkenen. Verder onderzoek ik hoe de interactie tussen de betrokkenen verloopt en hoe de verschillende soorten kennis bijdragen aan het proces. Maria richt zich vooral op het proces, hoe de interactie verloopt en wat voor invloed de interactie heeft op het verloop van het proces (bijvoorbeeld iteratierondes, loops). Op basis van de theorie (artikelen) is er allerlei informatie vergaard over co-creatie en de verschillende interacties en rollen die hierin plaats kunnen vinden. Daar zijn de interviewvragen op gebaseerd.
Anonymity	De geïnterviewde wordt medegedeeld dat de inhoud van het interview alleen wordt gebruikt voor de onderzoeken van Maria en mijzelf en dat informatie niet te traceren is. Ook wordt de identiteit niet vermeld.
Stopping + not answering	Ook kan het interview op elk moment worden gestopt indien gewenst en vragen mogen worden overgeslagen als de geïnterviewde dat wil.
Length of the interview	Het interview zal ongeveer 45-60 minuten duren.
Recording	De geïnterviewde wordt gevraagd of het akkoord is dat het wordt opgenomen. Dit geeft de mogelijkheid om het terug te luisteren en vervolgens beter te kunnen analyseren. Verder wordt het consentformulier wordt besproken.
Introducing questions	
1	Wat is uw functie en hoe bent u betrokken bij het project?
2	Heeft u aan vergelijkbare projecten gewerkt? - Zo ja, in hoeverre was dat anders dan dit project? - Waarom hebt u besloten aan dit project deel te nemen?
Main questions	
3	Wat vindt u van co-creatieprocessen in ruimtelijke ordening in het algemeen? - Denkt u dat co-creatie geschikt is voor dit project? → Zo ja, waarom? Zo nee, waarom?
4	Wat beschouwde u vooraf als de grootste uitdagingen? - Zijn deze uitdagingen aanwezig geweest in het project? - Welke andere uitdagingen/hindernissen waren aanwezig in het project? - Was het proces beperkt door de vooropgestelde ontwerpeisen (zoals

	vaarroute)? → Zo ja, kon dit worden voorkomen?
5	<p>Wordt het project gehinderd doordat het online moet plaatsvinden?</p> <ul style="list-style-type: none"> - Hoe beïnvloedde dit de interactie in de workshops? - Zou het ook positief kunnen bijdragen aan het project?
6	<p>Denkt u dat de betrokkenen vrij kunnen spreken in de workshops?</p> <ul style="list-style-type: none"> - Zo ja, waarom? - Zo nee, waarom?
7	<p>Welke belangen spelen er bij de verschillende actoren in het project?</p> <ul style="list-style-type: none"> - Denkt u dat alle participanten akkoord kunnen gaan met beslissingen die worden gemaakt in het project? - Denkt u dat participanten eerder geneigd zijn besluiten te accepteren als hier expertkennis bij wordt gebruikt?
8	<p>Hoe ziet u de rol van experts in het project?</p> <ul style="list-style-type: none"> - Is hun bijdrage effectief? → Zo ja, waarom? Zo nee, waarom? - Hoe kunnen ze effectiever zijn?
9	<p>Zijn de experts in staat om voldoende antwoorden te geven in de workshops?</p> <ul style="list-style-type: none"> - Hoe kan dit worden verbeterd? - Denkt u dat de experts als legitiem worden beschouwd door de andere betrokkenen? (Dat hun informatie en toevoeging als juist wordt gezien)
10	<p>Hoe beleeft u de interactie tussen experts en de andere betrokkenen in het project?</p> <ul style="list-style-type: none"> - Denkt u dat deze interactie voor beide kanten genoeg voldoening geeft?
11	<p>Hoe beschrijft u de rol van lokale kennis in het project?</p> <ul style="list-style-type: none"> - Hoe is de kennis van experts verweven met de lokale kennis? (→ Hoe gaan experts met deze lokale kennis om?)
12	<p>Terugkijkend op het proces, hoe beschrijft u de structuur van het proces? (Fasen, loops, iteratief, sequentieel)</p> <ul style="list-style-type: none"> - Denkt u dat de juiste partijen zijn uitgenodigd in het project? - Welke leerpunten m.b.t. het co-creatieproces zijn er te trekken uit dit project? - Als u in de toekomst een vergelijkbaar project zou uitvoeren, zou u dan opnieuw een soortgelijk co-creatieproces toepassen? → Zo ja, waarom? Zo nee, waarom?
Closing questions	
	Is er iets wat ik niet heb gevraagd, maar u nog zou willen zeggen?
	Heeft u opmerkingen/aanmerkingen voor de interviews die nog komen?
	Zijn er nog belangrijke documenten of relevante personen die geraadpleegd of geïnterviewd kunnen worden?

End remarks	
Next proceedings	<p>De opname zal worden uitgetypt en het wordt gebruikt in het beantwoorden van de onderzoeksvragen.</p> <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de transcriptie wil ontvangen. - Omdat Maria haar onderzoek wat langer doorloopt, kan het zijn dat ze later nog eens contact opneemt voor wat extra vragen. De geïnterviewde wordt gevraagd of dat goed is.
Thanking	De geïnterviewde wordt bedankt voor zijn/haar tijd.
Contact information	<p>Contactinformatie wordt uitgewisseld als dit nog niet is gedaan.</p> <ul style="list-style-type: none"> - De geïnterviewde wordt gevraagd of hij/zij de scriptie wil lezen zodra het af is.

Appendix 3 – Codes

Code group	Subgroup	Code	Deductive/Inductive	
Co-creation	Process	Challenges	Inductive	
		Co-design	Deductive	
		Complex problems	Deductive	
		Content	Inductive	
		Creativity	Deductive	
		Design process	Deductive	
		Developing systems, products, or services	Deductive	
		Evaluation	Inductive	
		Facilitator	Deductive	
		Informal aspects	Deductive	
		Innovation	Deductive	
		Iterative process	Deductive	
		Limitations	Deductive	
		Preconditions	Deductive	
		Project planning	Inductive	
		Take risks	Deductive	
		Uncertainties	Deductive	
		Collaboration	Client	Inductive
			Contractor	Inductive
			Contracts	Deductive
			Different interests, goals, ambitions	Deductive
			Distribution of power	Deductive
			Flexibility	Deductive
			Formal aspects	Deductive
			Governmental organizations	Deductive
			Multiple actors	Deductive
			Project manager	Inductive
	Public contribution	Deductive		
	Shared knowledge	Deductive		
	Shared vision	Deductive		
Experts		Effectiveness in service development	Deductive	
		Expectations	Inductive	
		Expert knowledge	Deductive	
		Facilitating debate	Deductive	
		Providing answers	Deductive	
		Relying on experts	Deductive	
		Service provider	Deductive	
Locals		Local knowledge	Deductive	
		Residents/citizens	Deductive	
Interaction		Digital environment	Inductive	
		Distrust	Inductive	
		Interaction	Deductive	
		Language	Inductive	
		Multiple actors participating, producing knowledge, and making sense together	Deductive	
		Speak safely and authentically	Deductive	
		Tension	Inductive	
	Trust	Deductive		

Appendix 4 – Consent form