

Investigating participation of different stakeholders in co-creation processes and its impacts in Ooijen-Wanssum, the Netherlands

A case study on co-creation in Ooijen-Wanssum



MSc. Thesis by Mariëlle van Es

September, 2022

Water Resources Management group

Source image front page: <https://www.oijen-wanssum.nl/beeld/fotos/>

Investigating participation of different stakeholders in co-creation processes and its impacts in Ooijen-Wanssum, the Netherlands

A case study on co-creation in Ooijen-Wanssum

Master thesis Water Resources Management submitted in partial fulfilment of the degree of Bachelor of Science in International Land and Water Management at Wageningen University, the Netherlands

Mariëlle van Es

September, 2022

Supervisor(s):

Dr. Lena Hommes

Water Resources Management group

Wageningen University and Research

The Netherlands

www.wageningenur.nl/wrm

Host organization:

Koos Beurskens

Deltaprogramma Maas/Waterschap Aa & Maas
s'Hertogenbosch

The Netherlands

Abstract

Recently there has been a shift towards more participatory approaches like co-creation in the water management sector. This trend towards co-creation is based on the idea that it will contribute to more sustainable and innovative solutions and a better understanding of complex planning challenges. Despite the popularity of the concept of co-creation there is a gap around understanding the dynamics of co-creation processes.

This research aims to contribute to open the black box of co-creation processes by analyzing the impact of co-creation processes in the case of a water safety project in Ooijen-Wanssum. It shows that co-creation processes are highly dynamic and vary during the initiation, plan development and implementation of the project. During the project various platforms for invited participation emerged (e.g., village council meetings or design workshops). It matters who works on the project since the participation process in Ooijen-Wanssum was largely shaped by the ideas of a few key actors. Factors that have an influence on co-creation are among others the availability of funding, attitude of stakeholders, open communication, initial trust and flexibility to adapt the design. Although various factors that have an influence on co-creation processes were identified, these processes are inherent to conflict and contestation. Co-creation processes are unfolding histories and emerge from pre-existing social, political and economic relations.

The impact of the project is diverse. There is a tendency to focus on the societal impact of the project and to deny individual suffering. This research highlights that co-creation processes are connected to water management projects but start before and continue after the formal ending of the project. The co-creation process in Ooijen-Wanssum started before the actual project and emerged in a particular context. Since people continue to produce and reproduce the environment they live in, new discussions around co-creation and participation will develop after the project. In Ooijen-Wanssum new discussions on management and maintenance and the cause of the floods in the area in July 2021 arose.

Keywords: co-creation, participatory water management, flood plain (re)development, Ooijen-Wanssum, the Netherlands

Preface

For me, my research has always been connected to my personal beliefs and experiences. In my opinion science is highly emotional. This does not mean that it is not systematic. I think we should tell the stories that are connected to our work as scientists. My story and things that happened in my life shaped this research and I feel like I cannot write this thesis without talking about this. I wrote this thesis when I was (and am) struggling with PTSD and an eating disorder. My fieldwork confronted me with many fears I still have and doing live interviews has been extremely stressful. At the same time, academic writing has always been a place to deal for so many things going on in my mind. It has been a place to think about power relations, about whose voice is being heard, feelings of empowerment and disempowerment and how to turn your feelings of disempowerment into something that empowers you. My academic interests are strongly related to my personal experiences. Because of this my research has never been just research but something deeply emotionally. My thesis has given me a feeling of empowerment and strength, that despite everything I finished it. It has been something to distract my thoughts when I could not sleep. But sometimes it has been very frustrating when I could hardly work because concentration was so low, and I could only see blurred characters.

I could not have written this thesis without my friends. Thanks to all the people that supported me in writing this thesis by working together, listening to all my stories and being there for me when I needed my friends the most. Talking about my research has always been very effective in structuring my thoughts and staying motivated to finish this thesis. So, thanks to Geert Dekker for being my thesis buddy and giving very helpful feedback to almost all the parts I wrote (and they were long, I'm not so good in writing to-the-point). Thanks to Savanna Kok & Christa van Oorschot for joining me during my first two fieldwork trips, for understanding how stressful it has been to start fieldwork after all the things that happened and for providing feedback to parts of my thesis. I would also like to thank Marijn de Vos for his help with the lay-out.

I also want to thank Lena Hommes for supervising my research. Thank you for all the feedback and your help in structuring my thoughts. However, most of all I'm thankful for the space you give me to work on processing everything that was happening in my life.

Thanks to Koos Beurskens for giving me the opportunity to research co-creation processes in Ooijen-Wanssum. Kees-Jan van den Herik and Marjan Gooren thanks for providing the contact details of many people who were involved in the project in Ooijen-Wanssum.

The completion of this study would not have been possible without the willingness of various people in Ooijen, Blitterswijck and Wanssum, involved government officials and experts to answer my questions. Their time and knowledge are appreciated very much.

Lastly, I also would like to thank my parents, sisters and grandparents for their support during my thesis research.

Table of contents

| | |
|---|--|
| Abstract..... | iv |
| Preface..... | v |
| List of abbreviations | viii |
| List of figures..... | Fout! Bladwijzer niet gedefinieerd. |
| List of tables | Fout! Bladwijzer niet gedefinieerd. |
| 1. Introduction | 1 |
| 1.1 Overview Report | 2 |
| 1.2. Research Design | 2 |
| 1.2.1 Research objectives | 2 |
| 1.2.2 Research questions..... | 2 |
| 2. Conceptual framework..... | 3 |
| 2.1 Co-creation and participatory governance..... | 3 |
| 2.2 A typology of co-creation..... | 3 |
| 2.3 Co-creation processes | 4 |
| 2.4 Impact of co-creation processes | 5 |
| 3. Methodology..... | 7 |
| 3.1 Case study..... | 7 |
| 3.2 Selection of the case..... | 7 |
| 3.3 Data collection | 7 |
| 3.4 Data analysis | 9 |
| 4. Background | 10 |
| 4.1 Dutch river management and participation | 10 |
| 4.2 The river Maas | 11 |
| 4.3 Introduction case study area: Ooijen-Wanssum | 13 |
| 5. Introduction Results..... | 16 |
| 6. Drivers and conditions for co-creation | 19 |
| 6.1 Flood events as driver for policy change | 20 |
| 6.2 Perspective of public officials | 22 |
| 6.3 From improving water safety to redevelopment of the flood plain area..... | 23 |
| 6.4 Reactivating the Oude Maasarm..... | 25 |
| 6.5 Other drivers | 28 |
| 6.6 Conclusion | 29 |
| 7. Co-creation and Participatory decision-making..... | 30 |
| 7.1 Initiation phase: Choosing a preferred strategy 2006-2012 | 31 |
| 7.1.1 Collaborative networks: Separate networks of stakeholders | 31 |
| 7.1.2 Decision-making..... | 32 |

| | |
|--|----|
| 7.1.3 Participation..... | 32 |
| 7.2 Plan development 2012-2016 | 35 |
| 7.2.1 Platforms for participation | 35 |
| 7.2.3 Decision-making | 37 |
| 7.2.4 Participation..... | 38 |
| 7.3 Construction phase 2016-2020 | 41 |
| 7.3.1 Platforms for participation | 41 |
| 7.3.2 Collaborative networks | 43 |
| 7.3.3 Decision-making | 44 |
| 7.3.4 Participation..... | 45 |
| 7.4 Conclusion | 46 |
| 8. Ooijen-Wanssum as <i>the</i> way forward? | 47 |
| 8.1 Knowledge, project design and implementation | 48 |
| 8.1.1 Innovation..... | 48 |
| 8.2 Project Impacts | 49 |
| 8.3 Management and maintenance..... | 50 |
| 8.3.1 Management of Maaspark | 50 |
| 8.4 Floodings July 2021 | 53 |
| 8.5 Conclusion | 56 |
| 9. Discussion..... | 57 |
| 9.1 Discussion of results: scale, narratives of success and rights of nature | 57 |
| 9.2 Reliability of research..... | 59 |
| 9.3 Implications for other cases | 60 |
| 9.4 Recommendations | 60 |
| 10. Conclusion..... | 62 |
| References..... | 64 |
| Annex 1. Overview of Interviewees..... | 69 |
| Annex 2 Interview guide | 70 |

List of abbreviations

| | |
|------------------------------|--|
| CDA | Christelijk Democratisch Appel, Christian Democratic Party |
| Department of I&W | Department of Infrastructure and water management |
| IRM | Integrated River Management |
| LLTB | Limburgse Land en Tuinbouw Bond, Limburg Agricultural and Horticultural Organization |
| PIP | Provinciaal Inpassings Plan, Provincial Zoning Plan |
| POW | Projectbureau Ooijen-Wanssum |
| RoN | Rights of Nature |
| RWS | Rijkswaterstaat, Dutch Water Authority |

List of figures

| | | |
|----------|---|----|
| Figure 1 | Conceptual Framework | 6 |
| Figure 2 | Overview of case study areas | 13 |
| Figure 3 | Overview of sub-projects | 15 |
| Figure 4 | Timeline Ooijen-Wanssum | 18 |
| Figure 5 | Graphical overview drivers and conditions | 19 |
| Figure 6 | Elevation map of project area | 34 |
| Figure 7 | Overview management and maintenance | 47 |
| Figure 8 | Maaspark Ooijen-Wanssum | 50 |
| Figure 9 | Floodings July 2021 | 54 |

List of tables

| | | |
|---------|---------------------------------|----|
| Table 1 | Overview of literature sources | 7 |
| Table 2 | Overview of stakeholders | 16 |
| Table 3 | Participation in Ooijen-Wanssum | 30 |

1. Introduction

The Netherlands is a low-lying country in Western-Europe prone to flooding. Without dunes and dykes, more than 65% of the country would be flooded during high tides (Ritzema & van Loon-Steensma, 2018). The country has a long history of dyke engineering and water control. These interventions and related policies have had a big influence on the lives of people living in these riverine and coastal landscapes (Roth, Vink, Warner & Winnubst, 2017). Changing precipitation patterns and sea level rise due to climate change will lead to a significant increase in flood risk and increased complex water management. The combined impacts of climate change, population growth and economic development pose a serious challenge for water management in the Netherlands and require a transition of water management and governance (van Buuren, van Meerkerk & Tortajada, 2019; Ritzema & van Loon-Steensma, 2018; Deltaprogramma, n.d.).

Increasingly water managers try to include communities in policy making or service delivery. There is a bigger emphasis on the role communities can play regarding wicked challenges like climate change adaptation or resilience building. Various grassroots initiatives for collaborative water governance emerged (van Buuren *et al.*, 2019). This rethinking of water governance is not easy since a top-down and command-and-control culture is deeply embedded in the Dutch water sector (Roth & Winnubst, 2014). This trend towards co-creation and participatory planning is based on the idea that this will contribute to a “better understanding of complex planning challenges” (Rădulescu, Leendertse & Arts, 2020:1). It aims to combine professional and local expertise and enhance collaboration between various stakeholders to develop new and innovative solutions to wicked problems. The process of co-creation is defined as “the outcome of processes of co-producing and co-delivering public goods and services in which society, stakeholder groups and governmental actors have joint responsibility and their collaboration results in public value” (van Buuren *et al.*, 2019:371).

Despite the popularity of the concept of co-creation, there is a gap around understanding the dynamics of co-creation processes in the public sector. More participation is often considered as progress. For instance, the Dutch water authority Rijkswaterstaat considers these processes “as natural, unambiguous and unproblematic” (Roth & Winnubst, 2014:215). However, a more nuanced understanding of these processes is needed. More participation also means involvement of more stakeholders. Because of conflicts and contradictions between goals, intentions, assumptions and languages of different stakeholders the decision-making can become rather fuzzy (Roth, Warner & Winnubst, 2017). Therefore, co-creation processes are highly dynamic (Rădulescu *et al.*, 2020). Involving stakeholders in the creation of water management projects will not automatically lead to more creative and innovative solutions. Empirical analysis is needed to assess the impact of different participation practices in various context and analyze the political struggles and opportunities that emerge through these process (van Buuren *et al.*, 2019; Goodwin, 2019; Rădulescu *et al.*, 2020). This thesis research will contribute to a more in-depth understanding of co-creation by investigating how different stakeholders participated and with which results in the case of Ooijen-Wanssum in the north of Limburg. In this area a bypass of the river Maas was created to improve flood safety. The project¹ started in 2006 and ended in 2020 and is considered as a successful example of co-creation in the Dutch water sector (Nationaal DeltaCongres, 11-11-2021). This research will contribute to a more nuanced understanding of participation in Ooijen-Wanssum by critically analyzing co-creation in this case.

¹ The project consists of 6 sub-projects which are explained in section 4.3. In this research the project refers to the six sub-projects together.

1.1 Overview Report

The rest of this thesis is structured as follows: First, I will elaborate on the research objectives and questions. Then, I will elaborate on the applied concepts. Thirdly, the methodology is described. After that I will provide background information on participatory approaches in the water management in the Netherlands and the case of Ooijen-Wanssum. The result section consists of four chapters. In the first chapter I will provide an overview of the stakeholders and a timeline of the project. Secondly, I will investigate the conditions and drivers for the co-creation process in Ooijen-Wanssum. After that I will show how different stakeholders participated during different phases of the project and how decisions were made within spaces for co-creation. Fourthly, I will discuss how co-creation influenced knowledge, project design and implementation and its impacts. The thesis ends with a discussion of the results and methodology and a conclusion.

1.2. Research Design

1.2.1 Research objectives

This research will help to open the black box of co-creation processes by analyzing the spaces for participation that were created in the case of Ooijen-Wanssum and the interactions between different stakeholders in different phases of the project. It will analyze co-creation processes as sites for political struggle and opportunity. By doing so this thesis will contribute to a critical reflection on the trend towards more participatory approaches in the water sector in the face of climate change.

The objectives of this research are:

- (1) To investigate in which particular context and why the project in Ooijen-Wanssum emerged
- (2) To study how multiple stakeholders participate in co-creation processes in the case of Ooijen-Wanssum and to study how decisions are made within spaces for co-creation
- (3) To examine how co-creation resulted in the co-production of new forms of knowledge, project design and implementation in the case of Ooijen-Wanssum

1.2.2 Research questions

How do different stakeholders participate in co-creation processes in the project in Ooijen-Wanssum and with which results?

1. What were the drivers and initial conditions for the co-creation processes?
2. How did different stakeholders participate in the different phases of plan development and implementation of the project?
3. How were decisions made within spaces for co-creation?
4. How did the co-creation processes influence knowledge, project design and implementation and with which results?

2. Conceptual framework

2.1 Co-creation and participatory governance

Co-creation is seen as an approach to promote more democratic knowledge production (Rădulescu *et al.*, 2020). Co-creation aims to mobilize the experiences, resources and ideas of multiple stakeholders to create innovative solutions to deal with increasingly complex societal and environmental challenges and to create more just and sustainable societies (Leino & Puumala, 2020; Torfing, Sørensen & Røisenland, 2019; Rădulescu *et al.*, 2020). Participation of various public, private and societal actors is central in co-creation (van Buuren *et al.*, 2019). The co-creation process starts with a specific problem or idea around which a network of stakeholders that are affected or have an interest in the problem is formed (Rădulescu *et al.*, 2020). For this research co-creation is defined as “the outcome of processes of co-producing and co-delivering public goods and services in which society, stakeholder groups and governmental actors have joint responsibility and their collaboration results in public value” (van Buuren *et al.*, 2019:371). The added public value refers to plans, policies or services among others that lead to improved outcomes or a transformation of the understanding of the problem and new ways of solving it (Torfing *et al.*, 2019). In the context of this research this added value refers to new and innovative solutions and approaches to water governance that contribute more resilient and sustainable environments for riverine areas in the face of climate change.

Nonetheless, there are many challenges in realizing these co-creation processes. A critical reflection on who is able to participate and whose voice is being heard is needed because co-creation is not a synonym for inclusive governance. It requires critical assessment on the assumptions around co-creation and participation (Leino & Puumala, 2020). Various scholars have been critical, arguing that co-creation has a tendency to focus on “participation for participation’s sake” rather than on creating a space for “open innovation and joint knowledge production” (Leino & Puumala, 2020:2; Rădulescu *et al.*, 2020:2). Co-creation processes are often romanticized by policy makers and government officials. An image of unproblematic cooperation is created. However, in these co-creation processes “there are real power differences and contestations, with real benefits and burdens at stake for various actors, and real conflicts of interests related to these. Existing contestations, power differences and diversity of stakes and interest are the point of departure for the political process” (Roth *et al.*, 2017:54). It is important to ask on whose term’s participation is shaped and organized and who decides (Roth & Winnubst, 2014). Therefore, these processes should be foregrounded when analyzing co-creation processes. Co-creation does not only produce public goods and services but also new political subjects, relations and institutions (Goodwin, 2019). When the involved stakeholders are empowered, co-creation processes can change existing power relations between government agencies and citizens.

There is a need to consider power, agency and inequality and question what resilient and sustainable environments are according to and for whom (Cretney, 2014). It is needed to analyze and conceptualize co-creation in a broader socio-political context and critically look into the hybrid outcomes of these co-creation processes by analyzing who is able to participate in which way (van Hecken, Bastiaensen & Huybrechts, 2015).

2.2 A typology of co-creation

Examples of spaces for participation are multi-stakeholder platforms, design workshops, group discussions or community consultations or local advocacy and interest groups among many others (Rădulescu *et al.*, 2020). Depending on the phase of the project, different spaces for co-creation are provided (Jones, 2018). These spaces for participation can be categorized as *invited* or *created* spaces. Stakeholders can participate after an invitation of formal decision makers (*invited* space for participation) or through initiatives of stakeholders themselves (*created* space for participation). Invited participation can be used either as a means to

“increase legitimacy and support for policy measures” or to “enhance governance capacity for service delivery by enlarging collective action” (van Buuren *et al.*, 2019:371).

In the project Ooijen-Wanssum 4 different phases are distinguished: First, the *initiation phase* in which the possibilities to start a project and possible solutions are explored and a network of stakeholders that have an interest in the problem or are affected, is formed. Secondly, the *plan development and design* phase in which a shared understanding of the problem is developed, and different stakeholders engage in the decision-making process for the final design. This phase is followed by the *implementation phase* in which the project is constructed. The final phase of a project is the *management and maintenance phase* in which the project formally ends, and the focus is on maintenance of the project. During all phases it is important to reflect on the co-designed ideas and the co-creation process. Based on this assessment the process can be revised (Rădulescu *et al.*, 2020; POW, n.d .A)

2.3 Co-creation processes

Contextual conditions

Meijerink (2005) identified several conditions that can stimulate or hinder co-creation processes: **Problems, policies and politics**. First, there needs to be a shared feeling of urgency and problem perception. Problems are recognized and framed in a particular way. Secondly, the solution needs to be available, this refers to the wide variety of ideas (formalized in policies) floating around to deal with problems. Thirdly, politics, which involves the “national mood”, activities of pressure groups or administrative or legislative turnover (Meijerink, 2005). These three together create or limit a **window of opportunity for change**. This window of opportunity for change is often triggered by a shock event such as a flood disaster, new scientific insights or evaluations of policy programs (Meijerink, 2005). In the case of water management policy changes can often be connected to a (near) flood event (Zegewaarts *et al.*, 2015). These changes in the aftermath of a (near) flood disaster are complex and diverse and can be both formal or informal, planned or unplanned, slow or rapid and take place under uncertain and dynamic conditions (Birkmann *et al.*, 2008). These changes are affected by and influence the social, economic, political and natural environment (Birkmann *et al.*, 2008). This implies that co-creation emerges in specific circumstances and that various conditions influence the trajectory and outcome of co-creation processes (Rădulescu *et al.*, 2020; see figure 1 for an overview). Other factors that haven an influence on co-creation processes are among others, the availability of funding and supporting instruments and initial trust levels (Medema *et al.*, 2017). Theory on the window of opportunity for change shows that co-creation processes emerge in a particular context and in a particular time. Analyzing this context provides insights in which specific conditions allowed the co-creation process to emerge. Because of this, it is important to look why and in which way co-creation took place during a specific project. It implies that co-creation is context specific and therefore, co-creation processes can have many different shapes. It highlights that various factors have an influence on co-creation processes and therefore, the list above does not include all possible factors. For this reason, several factors mentioned in interviews but not in the list above such as local culture have been included in the analysis of the conditions and drivers for co-creation processes in Ooijen-Wanssum.

Collaborative stakeholder networks

Besides the external influences and starting conditions described above, the **relationships between different stakeholders, stakeholder characteristics** and the **organization of the collaborative process** influence the outcomes of co-creation processes (Medema *et al.*, 2017). Bridging organizations, which act as an intermediary between different stakeholder groups and networks have a crucial role in co-creation processes and facilitate the development of stakeholder networks and provide platforms for participation (Medema *et al.*, 2017). These organizations also have a critical role in crossing boundaries between different actors and have a strong influence on the development of a shared culture. Boundaries refer to “socio-ecological and socio-cultural differences between different knowledge or

stakeholder groups that lead to discontinuity in action or interaction” (Medema *et al.*, 2017:2). In Ooijen-Wanssum Habiforum² can be seen as the bridging organization during the initiation phase of the project. After this the projectbureau Ooijen-Wanssum (POW) acted as bridging organization between the different stakeholders.

For effective co-creation creating trust between stakeholders is essential (Medema *et al.*, 2017). Repeated personal and informal interactions between stakeholders are needed to create strong network ties. These interactions are often constrained by the availability of capacity and resources of bridging organizations (Medema *et al.*, 2017). Stakeholder characteristics (e.g., skills to facilitate dialogues between stakeholders, personal characteristics like education and family composition, historical relations, etc.) have a considerable influence on if and how co-creation practices emerge (Rădulescu *et al.*, 2020). Structural differences between stakeholders inevitably result in the development of subgroups based on profession, geographical location, etc. within networks for co-creation. The formation of these separate networks can create challenges for co-creation processes if these subgroups are not connected (Medema *et al.*, 2017).

Organization of the collaborative process is an important factor shaping the outcomes of co-creation processes. Facilitating an open and iterative dialogue in which stakeholders can express their interest is important. Also, clear “rules of the game” to guide interactions between stakeholders is necessary in co-creation processes (Medema *et al.*, 2017). Incentives for participation are higher when stakeholders cannot reach their goals through alternative means. Various studies on co-creation highlight that it matters which stakeholders are included and their connections since these affect the opportunities for co-creation (Medema *et al.*, 2017).

2.4 Impact of co-creation processes

Co-creation aims to create innovative solutions but in most cases innovation is weakly defined (Voorberg *et al.*, 2015). However, conceptualizing innovation is needed to be able to assess the impact of co-creation processes. For this research innovation is defined as “the creation of long-lasting outcomes that aim to address societal needs by fundamentally changing the relationships, positions and rules between involved stakeholders, through an open process of participation, exchange and collaborating with relevant stakeholders, including end-users and thereby crossing organizational boundaries and jurisdictions” (Voorberg *et al.*, 2015:1334). This process results in different and new approaches project design and implementation (Rădulescu *et al.*, 2020).

Integration of diverse sources of knowledge through co-creation can contribute to reduce knowledge gaps and enable the use of the full range of knowledge that is available in the water sector (Medema *et al.*, 2017). However, knowledge is contested and produced in socio-political processes that involve meaning making and interpretation (Roth, Köhne, Rasch, 2021). Therefore, critical reflection on which knowledge is produced by whom is needed.

Research on participatory processes and co-creation often focusses on the preparation and implementation phase of water management projects (interview J. Warner, 19-01-2022). After the implementation phase the focus is on success stories, which tend to neglect the impact of the project on the ‘receiving end’ and negative consequences on an individual level (interview D. Roth, 04-10-2021, *interview J. Warner*). However, the co-creation process is not finished when construction ends. It can create new discussion on individual impact of the project, management of the project area and unwanted consequences.

² Habiforum was an organization of professionals in the water sector, related to the department of I&W. Developed several tools and frameworks for participation.

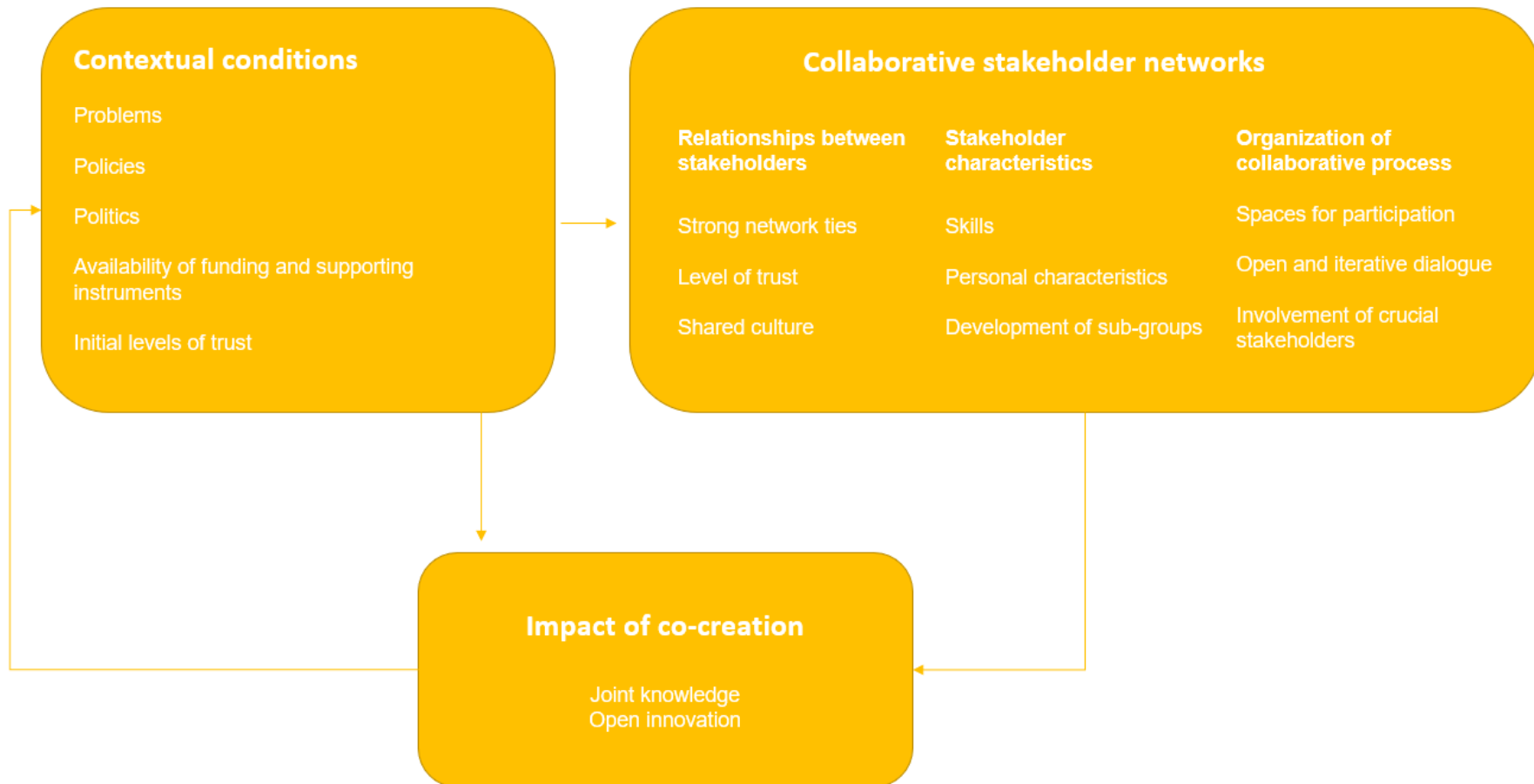


Figure 1 Conceptual Framework

3. Methodology

3.1 Case study

To answer my research questions I adopted a case study method. I think this approach best fits with my aim to develop a grounded understanding of how and why different stakeholders participate in co-creation processes in Ooijen-Wanssum. This method will provide an opportunity to gain a more in-depth understanding of the dynamics in co-creation processes in a specific context. The results of my research might not be applicable to other areas because co-creation processes are context dependent and differ from place to place. However, at the same time these specific co-creation processes are part of wider societal trends towards more participatory approaches and similar dilemmas and trade-offs might emerge in other cases.

3.2 Selection of the case

The selected case was one of the cases suggested by the program manager of Deltaprogramma Maas. I chose to analyze this case because in the Dutch water sector Ooijen-Wanssum is seen as a successful example of co-creation in which new and innovative water management solution that combines various functions of the river was implemented (van den Brand, Bijker & Daamen, 2020). The project of Ooijen-Wanssum is finished, which provides the opportunity to study how different actors worked together in different phases of the project and to show the diversity of co-creation processes.

3.3 Data collection

Data has been collected between October 2021 and January 2022. Different data collection methods were used: semi-structured interviews, field observations and a literature review.

Literature review

Before, during and after the fieldwork a literature review was conducted. Relevant academic articles, internal documents, newspaper articles and policy documents were used. Also a documentary and other video and audio material was used (see table 1 for an overview). The aim of the literature study was to gain insights in the shift towards more participatory governance approaches in the Dutch water sector and some of the constraints and opportunities for co-creation processes. It provided background information for the case. The Ooijen-Wanssum project is already finished and both academic publications and official publications about the project have been used to reconstruct the co-creation process.

Table 1 Overview of literature sources

| Category | Key words | Institutions |
|-----------------------------------|---|---|
| Academic articles | Co-creation, co-production, participation, | Universities |
| Project documents | Ooijen-Wanssum, area development | Projectbureau Ooijen-Wanssum |
| Newspaper articles | Ooijen-Wanssum, Limburg | De Limburger, NOS, NRC |
| Policy documents | Nationaal Deltaprogramma, Deltaprogramma Maas | Waterschap, Rijkswaterstaat, Nationaal Deltaprogramma |
| Video material and podcast | Ooijen-Wanssum, documententary, | ProjectBureau Ooijen-Wanssum |

Semi-structured interviews

Individual interviews with government officials involved in the project in Ooijen-Wanssum, employees of the construction company, inhabitants and researchers were performed to provide insights in the motivations and opinions of different stakeholders on participation and the project in Ooijen-Wanssum. In total 33 interviews with 35 people have been conducted (see annex 1 for an overview). The interviews have been conducted in Dutch and therefore quotes from interviews in this thesis are translated. In October and November inhabitants were interviewed in person, whereas government officials, researchers and others have been interviewed online. From December onwards all interviews have been online via MS Teams, both because of Covid regulations and personal circumstances. When permitted by the interviewee the interviews on teams have been recorded and during the interview, I took some notes. The interviews have been transcribed afterwards. For interviews in person, I took notes and notes were sent to the interviewee. This gave the interviewee the possibility to provide some feedback. After each interview I read my notes to get an overview of the information I collected and to reflect on which information or perspective was still missing.

I used a semi-structured interview method. Main topics and questions were fixed but follow-up questions were used (see Annex 2 for the interview guide). This gave the interviewees the opportunity to elaborate on topics that are important to them.

Some interviewees explicitly asked to be anonymized. Therefore, I chose to anonymize all actors directly involved in the project Ooijen-Wanssum. Various interviewees had multiple roles during the project, for example the stakeholder relation officer also was part of the team of Habiforum that explored the possibility to start a project in the area.

Three experts on co-creation and participation in water management have been interviewed. They have been selected based on their expertise. One of them was conducted before the field work, one during and one after the fieldwork. The first expert interview helped me to structure my thoughts, whereas the other interviews helped to connect the information to broader social processes and link it to academic debates.

Interviewees have been selected by using a snowball method. After the first interviews I asked if the interviewee had any suggestions for people to interview. Some interviewees were suggested after an informal conversation during a walk in the area. Also, a list of possible interviewees was provided by the secretary of the former projectbureau Ooijen-Wanssum. This list was used to contact government officials, the director of the construction company and excursion leaders from the area. Besides this, people involved in the podcast or documentary about Ooijen-Wanssum were contacted. I tried to interview people from various professional backgrounds (e.g. science, government) to be able to understand who can participate and whose voice is being heard and to gain insights in the diversity of co-creation processes. Not all interviewees have been directly involved the project or participated in co-creation. However, besides two academics and three interviewees involved in MaasCleanUp all other interviewees were affected by the project. The interviews related to MaasCleanUp were conducted because of personal interest in rights of nature. The results of the interviews have been discussed with both supervisors for feedback.

Field observations

I visited Ooijen-Wanssum 8 times in October and November 2021. I usually combined interview in the area with a walk in Maaspark Ooijen-Wanssum to observe the environment. This provided context to the interviews. During these walks I approached several people for a short informal and unstructured talk about the project. It provided the opportunity to talk to people from the area who have not been directly involved in the project. After these talks, I made some notes. Besides this, I visited the National Delta Congress in Maastricht on November 11, 2021. The case of Ooijen-Wanssum was discussed here and during the presentation I took notes. I also attended two workshops of Deltaprogramma Maas on co-creation. This provided insights in the functioning of the river Maas and different debates going on around the management of the Maas. In August 2021 I visited the exhibition “Machtige Maas” (Powerful Meuse) in the Limburgs museum and took notes. In this exhibition various artworks explore the relation between rivers and humans and discuss how the river Maas is connected to the identity of the province of Limburg. It provided an opportunity to connect this research with art and gave some background about the role of the Maas in the history of Limburg.

3.4 Data analysis

After the data collection I read my interview transcriptions and notes. I started with the analysis of the interviews with the following key actors: stakeholder relation officer and investigator Habiforum for the initiation phase, chair of village council Broekhuizenenvorst and stakeholder relation officer for the plan development phase and the landscape architect and construction company for implementation). The key actors were selected based on their role in Ooijen-Wanssum or their expertise, e.g. various other interviewees referred to the stakeholder relation officer as the expert on the participation process. I included people with different roles and backgrounds in the selection of the key actors. I analyzed the interview and investigated which issues emerged. For example, during the interview with the stakeholder relation officer the importance who is working on the project was discussed. I read and reread other interviews to analyze what other interviewees said about this to get a more in-depth understanding of the issue. Since I used semi-structured interviews and some of the issues were brought up by interviewees not all interviews discuss the same topics. When no additional information could be found in another interview, newspaper articles or policy documents were used to verify information and to gain a more in-depth understanding of the topic. The information from interviews was linked to academic publications about co-creation or an interviewee from academia to connect the discussion to the theory on co-creation.

4. Background

4.1 Dutch river management and participation

Water management and flood control have a central role in Dutch history. A constant battle against water is deeply embedded in Dutch identity and has had a big impact on what the Dutch landscape looks like today. This is connected to continuous technological innovations and related growth of institutional capacities (Zegewaard, Petersen & Wester, 2015). Around the 12th century villages started to cooperate and the emerging decentralized water management organizations of different villages (the water boards) enabled a change from digging ditches for drainage towards more systematic hydraulic engineering. In the 18th century the division of flow over the major river branches was stabilized. In the 19th century rivers were canalized (Zegewaard *et al.*, 2015). These river works were executed by Rijkswaterstaat, the executive department of the Ministry of water management, and this organization gradually formed a state within the state (*interview D. Roth*).

However, this increase of institutional and technological capacities results in a technological lock-in. This refers to “the situation where only every-increasing efforts can keep the system operational” (Wesselink *et al.*, 2007 as cited in Zegewaard *et al.*, 2015:435). This means that when things will go wrong, and it is likely they will one day, losses are greater. Nowadays unruly technology will be blamed, instead of, as in the past, unruly nature (Zegewaard *et al.*, 2015). In the face of climate change water management is much more “a matter of dealing with uncertainties, than of building and constructing certainties” (Zegewaard *et al.*, 2015:437). However, the Dutch water sector is communicating a very different image internationally. Everything is portrayed as under control and the country is considered to be protected from flooding by large engineering structures (Zegewaard *et al.*, 2015). The Dutch knowledge export on water management has become a business worth billion and creates a pressure to write success stories and limits the possibilities for critical reflection on Dutch water management projects (*interview J. Warner*).

Participation in river management

Extreme weather events caused about 1735 levee failures between 1134 and 2006 (Ritzema & van Loon-Steensma, 2018). Often after such an event, specific legalization was introduced and (near) flood events have a central role in decisions around water management (Zegewaard *et al.*, 2015). After the 1953 flood disaster the Delta Act was created, in which higher standards for flood protection were set, responsibilities were defined and financial resources were guaranteed (Ritzema & van Loon-Steensma, 2018). These plans were implemented top-down and involved the construction of structural flood defense measures. However, the construction of the Oosterschelde dam resulted in the ‘ecological turn’ in water management in the Netherlands (*interview D. Roth*). This involved a new way of setting up water management projects in which nature development and flood protection were combined (Zegewaard *et al.*, 2015).

From the 1970s onwards there has been a shift towards participatory approaches in flood risk management interventions. In society there has been a growing emphasis on cultural, ecological and landscape values, and local livelihoods. Increasingly strong demands for citizen involvement in planning processes triggered important political and institutional changes in the water management sector. As a result, there were more opportunities for affected people to participate in the planning and decision-making process as stakeholders (Roth *et al.*, 2017).

Before the turn of the century the focus was mainly on structural flood defense but after the 2000 combinations of infrastructural and spatial solutions were promoted (Roth *et al.*, 2017). After the (near) floods in 1993 and 1995, in which more than 200 000 inhabitants living along

the river Rhine were evacuated the focus shifted towards the rivers. Until these floods people felt safe behind the dikes (*interview J. Warner*). The River Delta Plan was developed. This plan was influenced by the European Water Framework Directive and aimed for a more integrated form of water management (Zegewaard *et al.*, 2015). This was connected to a revaluation of rivers in Western-Europa. "Rivers had long been seen as a threat (flood risk) and treated as a dumping sited for agricultural and industrial waste or as transport route" (Warner *et al.*, 2010 as cited in Zegewaard *et al.*, 2015:436).

In 2006 the "Room for the River" program was launched which focused on a combination of spatial and infrastructural solutions to reduce water levels during high river discharge and create extra storage along the rivers (Roth *et al.*, 2017; Ritzema & van Loon-Steensma, 2018). The aim of the program was to deal with the "residual" risk and in this way, it materializes the view of rivers as threat (Zegewaard *et al.*, 2015). These spatial solutions for flood risk management are socially and politically sensitive and are contested by people who feel damaged by the negative consequences of depoldering or dyke reinforcement initiatives (e.g. loss of view or property) (Roth *et al.*, 2017). Conflicts between local citizens' groups and the government gradually lead to a realization of government actors for the need of more participatory approaches to flood risk management interventions "if only to avoid protest and forms of resistance against government plans" (Roth *et al.*, 2017:53). Also, European legislation demanded more participatory approaches. Participatory planning and involvement of civil society in flood risk management is one of the requirements European Union's Water Framework Directive of 2000, which aims to enhance participatory approaches (Roth *et al.*, 2017).

However, top-down and command-and-control discourses are deeply embedded in the Dutch water sector. For example, Rijkswaterstaat obtains its legitimacy from its professional engineering expertise. It frames flood risk management as an infrastructural war against water. Therefore, water professionals might be reluctant to lose control or consider the voluntary work of citizens as unpredictable, unreliable or a threat to national security (Roth & Winnubst, 2014; Voorberg *et al.*, 2015).

In 2008 the second Delta Committee presented their water and flood management plans for the Netherlands. These plans were largely influenced by the Katrina flood in 2005 in New Orleans. It anticipated on future flood events as a results of climate change and proposed several recommendations to make the Netherlands climate proof and safe against flooding in the future. It focuses on flood prevention since "this has proven to be the most effective strategy in the past" (van den Brink, Termeer & Meijerink, 2011:19). After this the Delta Program has been established, which is headed by the Delta Commissioner. Participation is considered as an essential part of the Delta program. It advises to involve directly affected stakeholders in an early stage to develop new solutions and to organize a process of joint fact finding (Deltaprogramma, 2020). This further triggered the shift in water management from a technical, top-down approach to a more adaptive and participatory approach like co-creation (Ritzema & van Loon-Steensma, 2018; Vreugdenhil & Wijermans, 2012).

4.2 The river Maas

The case study area is situated along the river Maas (Meuse in English). The river Maas originates in France, flows through Belgium, enters the Netherlands in the southern province of Limburg and empties into the North Sea at the port of Rotterdam (Roth *et al.*, 2017). In Limburg the river is called Mooder Maas (Mother Meuse). The Maas is divided into six trajectories, based on geological history, water and sediment movement and human interventions (Asselman, Barneveld, Klijn & van Winden, 2019). The project area is located in the Zandmaas.

In the 1930s river channelization and closing off of some branches decreased the length of the river by 20 kilometers. This was part of Plan Lely to increase the flood velocity in the river (Asselman *et al.*, 2019). The project unintentionally increased flood risk and reduced biodiversity and riverine landscape values of the river (Roth *et al.*, 2017). The Maas is a rainfed river and because of this the variation in discharge is high (Asselman *et al.*, 2019). Seven weirs are used to maintain a constant water level, which enables using the river for shipping (Rijkswaterstaat, n.d. A). These weirs were built when coal mining in the South of Limburg flourished (1915-1942). The weirs led to a reduction of flow velocity and water level fluctuations. As a result, riverine nature that was adapted to the dynamic circumstances of the Maas was lost (Asselman *et al.*, 2019).

In the past century the riverbed radically changed because of sand and gravel winning, in some areas the riverbed was lowered with 5 meters. The revenues of the sand and gravel extraction have traditionally been an important financial source for high water safety measures and nature development (Asselman *et al.*, 2019). However, because of various human interventions the sediment hardly moves, riverine nature has been lost and the low water discharge the river Maas has been severely disturbed (Asselman *et al.*, 2019). In total the Maas lost 50% of its original available space (Asselman *et al.*, 2019). In the face of climate change measures to reduce flood risk are needed, since most areas do not meet the required protection level (Asselman *et al.*, 2019).

In 2019 the MaasCleanUp foundation was established. This organization organizes several clean ups to remove plastic from the banks of the river and to reduce pollution at the source. Because the Maas is a rainfed and dammed river, plastic deposits are high compared to the other rivers in the country (interview IVN, 05-11-2021³). Also, the Schone Rivieren (Clean River) campaign of IVN originated in Limburg and together with MaasCleanUp, IVN started a campaign for a legal status of the Maas (MaasCleanUp, n.d.).

³ Hereafter interview IVN

4.3 Introduction case study area: Ooijen-Wanssum

Ooijen is a small neighborhood (*buurtschap* in Dutch) and is part of the slightly bigger village of Broekhuizenvorst and part of the municipality of Horst aan de Maas. Wanssum is a small village with 1,890 inhabitants in the north of Limburg (Gemeente Venray, 2020). Also, the village of Blitterswijk is located in the project area (see figure 2). Traditionally, the area of North-Limburg is used for intensive farming (Daalder, Rademaker & van Bakel, 2021). 23,5% of the total agricultural land in the area is part of the project area and therefore, no longer available for framing (DLG, 2015).

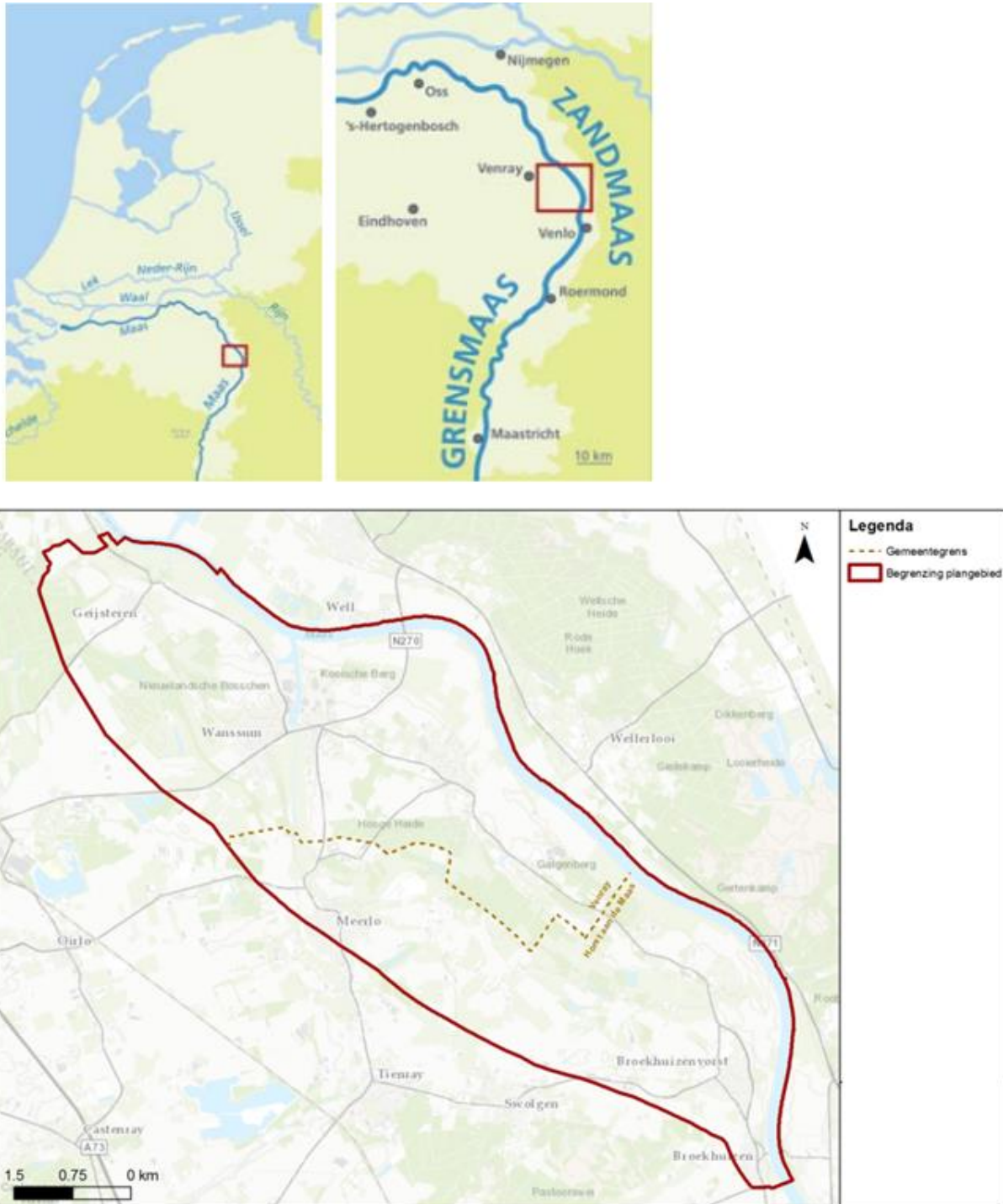


Figure 2 Overview case study area

source: van den Herik & van Rooy, 2007 & <https://www.ooijen-wanssum.nl/media/documents/plangebied.pdf>

Water safety in Ooijen-Wanssum

The Maas between Ooijen and Wanssum is part of the Zandmaas, the trajectory between the Maas without weirs and the diked Maas. The river flows through a small valley, in which the riverbanks gradually rise and form natural terraces. The terraces close to the river are regularly flooded, whereas the higher terraces form a natural protection against the water. Because of this, the area traditionally has no dykes. In the area of Ooijen-Wanssum the Maas has cut through the natural banks and has created a natural bypass (van den Herik & van Rooy, 2008).

During the floodings of the Maas in 1993 and 1995 area was flooded and in 1996 an emergency dike was built between Ooijen and Wanssum to improve water safety in the short term. However, this dyke closed off a natural bypass of the Maas and led to unwanted backwater effects (POW and MooderMaas, 2019). The area between the Maas and the old branch was appointed by Rijkswaterstaat (RWS) as winter bed of the river, which implies that the area can be flooded during winter. Because of this, building in this area was restricted. The area was mainly used for the harvesting of poplar trees and hay, since despite the construction of several drainage canals it was too wet to use for other crops (van den Herik & van Rooy, 2008). The project, which was initiated by Rijkswaterstaat, the province of Limburg, the waterboard and the municipalities is considered to be a final solution to solve the high-water problems in the area. It aims to both protect the area against high tides, improve the livability of the area and develop nature (Waterschap Limburg, n.d A.). In 2006 the exploration phase started, and the final project consisted of the following 6 subprojects (see figure 3):

1. Restore the natural bypass and remove bottleneck in Wanssum
2. Build a highwater bypass near Ooijen and excavate high areas
3. Build highwater bypass near Wanssum and excavate high areas
4. Construction of 2 new innovative dykes
5. Construct a new road around Wanssum
6. Support economic initiatives around the Maas by using riverine overspace (*rivierkundige overruimte* in Dutch)

Between 2012 and 2016 the plan was designed and in 2016 MooderMaas, a joint venture of the construction companies Dura Vermeer and Ploegam started with the construction of Maaspark. The project was budgeted at a total of 223 million euros. The Maaspark, a natural area of 450 hectares has been developed. In 2020 the project was finished and in 2021 the Maaspark⁴ was officially opened (POW and MooderMaas, 2019).

⁴ Maaspark Ooijen-Wanssum is a natural area that includes the natural and high-water bypasses in Ooijen and Wanssum and the construction of two new dykes.

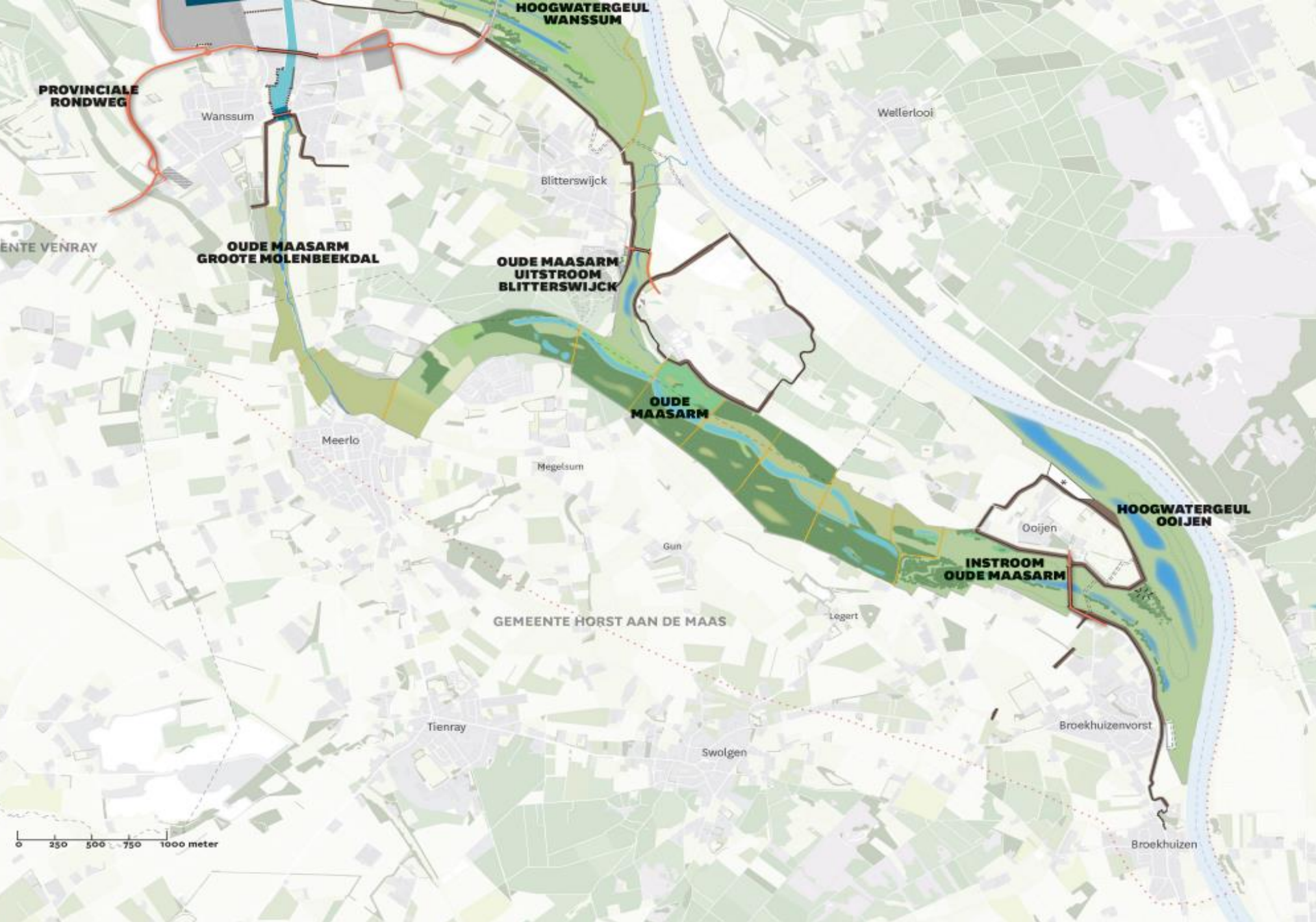


Figure 2 Overview of sub-projects
source: https://www.ooijen-wanssum.nl/media/documents/ontwerp_september2014.pdf

5. Introduction Results

In the following chapters the results of this research will be analyzed. This chapter provides an overview of the key stakeholders and their role in the project of Ooijen-Wanssum (table 2) and shows a timeline, which provides an overview of key events and a short description of each phase (figure 4). It should be acknowledged that stakeholder groups are not homogenous (e.g., not all farmers have the same opinion on the project), and some actors might be part of more than one group (e.g. both living in the area and working for the municipality).

Table 2 Overview of stakeholders

| Stakeholder | Role | Interest in Ooijen-Wanssum and relevant concerns | Source |
|---------------------------------------|--|---|--|
| Rijkswaterstaat (RWS) | RWS is the executive organization of the department of infrastructure and water management (I&W) and is responsible for flood safety in the area. | Improving water safety by reducing the water level in the Maas by 35 cm. Managing the flood plain areas after the project. | RWS, n.d. B), <i>personal communication</i> employee RWS via email, 23-11-2021 |
| Province of Limburg | Initiated the project in Ooijen-Wanssum and has been the leading partner during the project. Responsible for the management of Maaspark Ooijen-Wanssum | Opportunity to realize different ambitions like more nature, economic development and combine these in one project. | Provincie Limburg, n.d. A |
| Municipality Horst aan de Maas | Focus on improving opportunities for economic development and spatial quality. | Improving living and working environment for residents, developing opportunities for sustainable recreation Responsible for the management of roads, biking paths, etc. | Interview Horst aan de Maas; |
| Municipality Venray | Focus on improving opportunities for economic development and spatial quality. | Improving living and working environment for its residents. Opportunity to improve traffic safety in Wanssum and expanding the port of Wanssum. Responsible for the management of roads, biking paths, etc. | Interview Venray; |
| Waterboard Limburg | Managing the dykes and streams, evaluating if building plans are waterproof. | Improving water safety in the area | Waterschap Limburg, n.d. |
| Habiforum | Organization of professionals in the water sector, related to the department of I&W. Developed several tools | Doing research on participatory approaches to develop and exchange knowledge on spatial | Rijksoverheid, n.d. |

| | | | |
|--|---|---|--|
| | and frameworks for participation. The organization no longer exist. Exploring the possibilities to implement a water safety project in the area, organizing participation in the initiation phase | planning and area development. | |
| InnovatieNetwerk/ Bureau Stroming | Introduction of the concept of new rivers in the process | It provides an opportunity to implement their idea in practice | Van 't Klooster & Hajer, 2010 |
| Projectbureau Ooijen-Wanssum | Responsible for the daily management of the project, organizing participation, creating designs and tendering the project. | Implementing the project, combine the ambitions of the various governments in one organization, maintaining relations with local stakeholders. | Interview stakeholder relation officer |
| MooderMaas | Constructing Maaspark Ooijen-Wanssum. The company is a joint venture of DuraVermeer and Ploegam. | Implementing the project within assigned budget and time, making the final designs, experimenting with new type of dykes and using soil from the area | DuraVermeer, n.d., interview MooderMaas |
| Staatsbosbeheer | Staatsbosbeheer owns part of the land in the project area. Implemented a climate buffer on this land. | The climate buffer project affects the water safety project and vice versa | Interview Staatsbosbeheer |
| Farmers | Being directly affected by the project since the land of various farmers in the area was needed to build the project. | Fair compensation for the land and for some finding new land to continue farming | Interview dairy farmer Wanssum, interview dairy farmer Broekhuizen vorst |
| Inhabitants of villages | Diverse, some were directly affected, and flood defense structures were built in their backyards, for others the impact of the project is more indirect | Minimizing negative influence on the environment they work and live in, reducing nuisance of construction works | Interview investigator Habiforum, interview local musician |
| Entrepreneurs | Directly affected by the project, involved via various platforms of participation. | Removing restrictions for expansion of companies and opening up possibilities for investments | Van den Herik & van Rooy, 2008 |

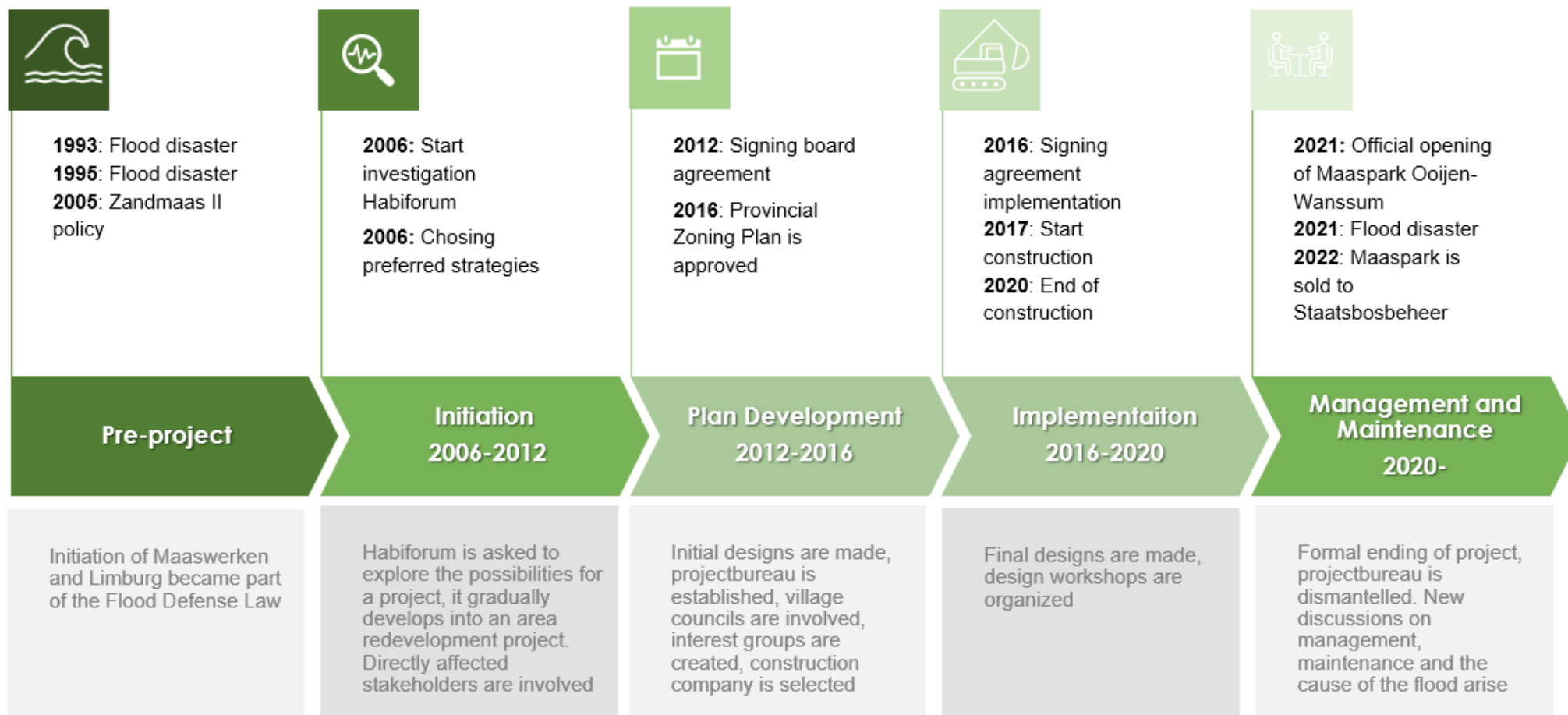


Figure 3 Timeline Ooijen-Wanssum

6. Drivers and conditions for co-creation

In this chapter I will answer the following research question: *What were the drivers and initial conditions for the co-creation processes?* I will analyze in which particular context the project emerged. I will show how the 1993 and 1995 floods in Limburg triggered various policy changes and how these changes led to a demand for more participatory approaches in water management. I show how these changes resulted in the initiation of a water safety project in Ooijen-Wanssum. After that I will elaborate on various vectors that opened up the possibility to implement a redevelopment of the floodplain area in Ooijen-Wanssum (see figure 5 for an overview).

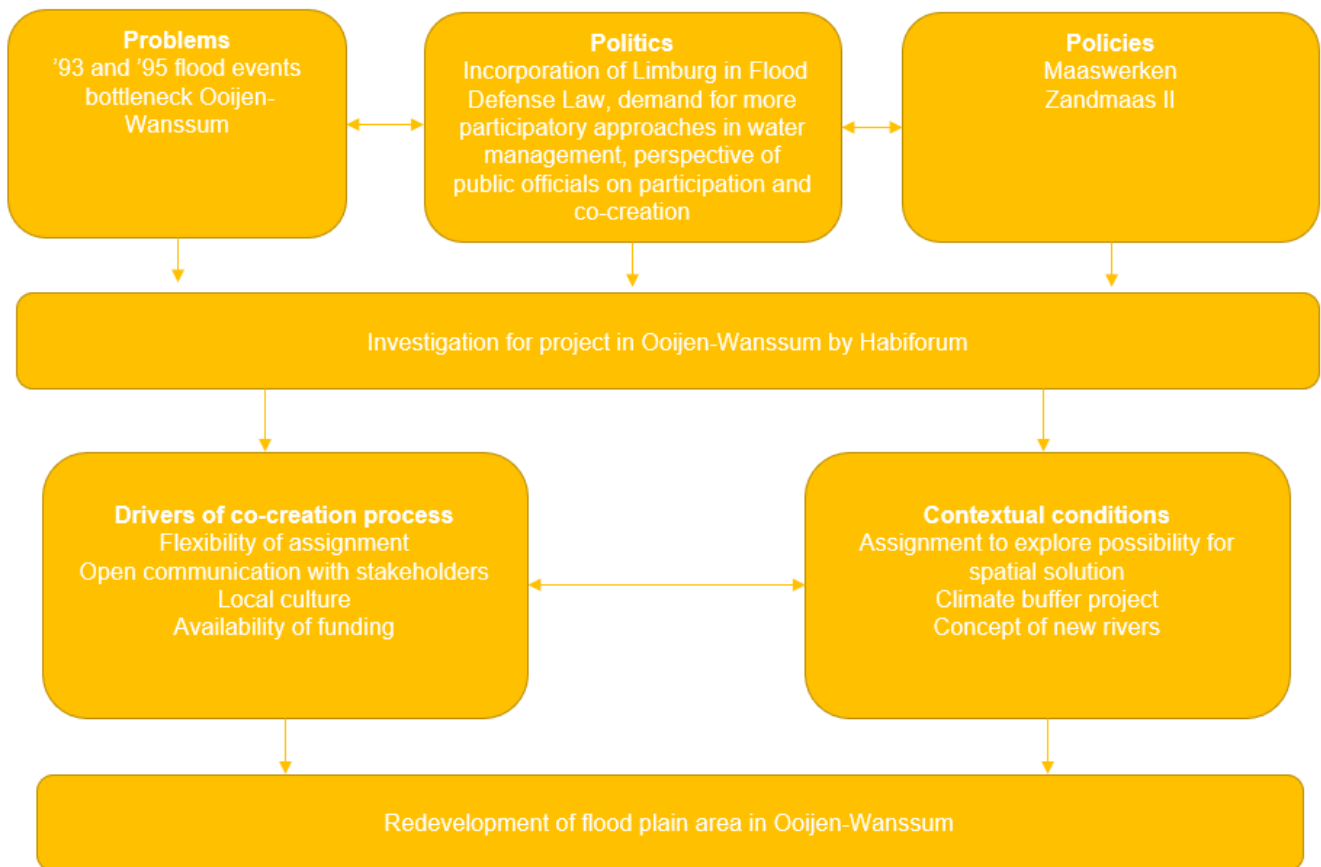


Figure 4 Graphical overview drivers and conditions

The *initiation phase* started in 2006 when the province of Limburg asked Habiforum to investigate the possibilities for improving water safety in the area of Ooijen-Wanssum (Hajer, Grijzen & van 't Klooster, 2010). Based on conversation with directly affected stakeholders (so called “*kitchen table conversations*” or *keukentafelgesprekken* in Dutch) and involved governments five strategies were formulated (Hajer *et al.*, 2010; interview stakeholder relation officer, *omgevingsmanager* in Dutch, 26-01-2022⁵). In August 2006 the preferred strategy “Nieuwe Rivier” was chosen during a symposium in which directly affected stakeholders, government officials⁶ and the investigators of Habiforum participated. This strategy was further developed in the following years. This phase ended in 2012 when the

⁵ hereafter *interview stakeholder relation officer*

⁶ Officials from the 5 involved governments: the province of Limburg, RWS, waterboard, municipalities of Venray & Horst aan de Maas

five involved governments signed the agreement for plan development⁷ (POW, 2015 A, POW, n.d. C).

6.1 Flood events as driver for policy change

Disasters can act as an accelerator for political processes (Birkmann *et al.*, 2008). These shock events can lead to recognition or (re)framing of a problem and create momentum to implement water safety projects (Meijerink, 2005). In this case the floods in 1993 and 1995 were important drivers for the investments in improving water safety in Limburg. Ooijen-Wanssum was partly financed with these funds. Before 1993, floods were considered to be something of the past that would not occur anymore. “It felt like something that could no longer be part of our lives, that we could be flooded” (interview Bureau Stroming, 02-12-2021⁸). Actually, there had been talks about lowering the safety standards (*interview J. Warner*). However, after these floods the government suddenly realized that a new long-term policy was needed. The flood events created a feeling of urgency and shared view on problem perception (Rădulescu *et al.*, 2020).

It was also recognized that more and heavier infrastructure alone was not enough and that a more integrated approach in which spatial and infrastructural measures are combined was needed (Wolsink, 2006). This radical shift is related to similar shifts abroad, where technocratic infrastructure for water management became contested and new approaches in water management were discussed. The floods in the nineties allowed for the rapid transition into integrated water management (Wolsink, 2006). These spatial solutions are socially and politically sensitive and contested. This led to a realization of government actors like provinces and the department of I&W that more participatory approaches to flood risk management are needed (Roth *et al.*, 2017). This shift towards an integrated approach did influence which solutions would be available and how these would be implemented in Ooijen-Wanssum.

Flood risk management in Limburg

Traditionally, flood safety management in Limburg is based on occasional flooding and people lived in the higher areas (Wesselink, Warner & Kok, 2013). However, after the 1926 flood people started to build in the lower areas and these areas were severely flooded in 1993 and 1995 (van den Herik & van Rooy, 2008). After these floods water management in Limburg fundamentally changed. Until this time Limburg was not part of the Dutch Flood Defense law. After the 1993 and 1995 floods the province of Limburg lobbied to become part of the delta and have the same protection standards as the rest of the country. After acceptance of the Delta Plan for Large Rivers in 1995⁹ it was decided that quick measures were needed in Limburg to reduce the risk for flooding from 1/15 to 1/250. Emergency dykes were quickly constructed (Rijkswaterstaat, 2018). Traditionally, this part of the Maas has no levees and therefore, their introduction significantly changed the area (e.g., the dykes were built in people’s backyards).

In 1997 the department of I&W and the province of Limburg signed an agreement and long-term flood protection plans were developed (Wesselink *et al.*, 2013). Because funding for flood protection works became available the Maaswerken program, which is still ongoing, was initiated (Wesselink *et al.*, 2013; Rijkswaterstaat, 2018). Maaswerken focused on spatial solutions to create more room for the river. Nature restoration was one of the pillars of the

⁷ The division of the different phases is based on the timeline of the projectbureau.

⁸ Hereafter interview Stroming

⁹ This law is similar to the Delta Plan after the 1953 flood disaster and provides an opportunity to circumvent planning procedures and other regulations for a limited period of time. This differs from the Flood Defense law, which formalizes protection levels (Wesselink *et al.*, 2013)

project. However, spatial solutions alone are not enough to realize the required reduction of the water level and therefore, it was decided to solve the water safety issue by raising the levees. Also, political pressure to quickly improve water safety and money issues contributed to this decision (Provincie Limburg, 2008). This part of the program is called Sluitstuk kades (*Closing piece levees*) (*interview Stroming*; Rijkswaterstaat Maaswerken, 2005). Originally Ooijen-Wanssum was also part of Sluitstuk kades and no additional spatial measures would be implemented. However, the final levee trajectory was never formalized by the department of I&W because somebody stopped this procedure (*interview Stroming*). When these levee trajectories are formalized, it becomes nearly impossible to change them. However, because this levee trajectory was not approved by the department of I&W yet, the discussions about increasing the levees or choosing a spatial solution could be reopened (*interview Stroming*). It shows something of the complexity of these processes and that coincidence also plays an important role in the initiation of Ooijen-Wanssum.

In 2005 Limburg was added to the Flood Defense law, which formalizes protection levels (*interview J. Warner*, Wesselink *et al.*, 2013). The floods changed the view in Limburg from floods as costly nuisance to a safety issue (Wesselink *et al.*, 2013). Because flood risk was managed according to the same standards as the rest of the country, strict design procedures and planning restrictions were implemented (Wesselink *et al.*, 2013). The incorporation of Limburg in the Flood Defense Law created an opening to implement measures to improve flood safety in Ooijen-Wanssum since measures to meet national safety standards had to be taken (*interview Stroming*).

A new opportunity for Ooijen-Wanssum

In 2005 an opportunity to implement a spatial solution in Ooijen-Wanssum emerged. The CDA (Christian Democratic Party) made a proposal for an additional plan for the Zandmaas to create an integral solution for the long-term (van 't Klooster & Hajer, 2010). It was decided that these measures should both increase the drainage capacity of the river and improve the spatial quality in the area (Provincie Limburg, 2008). Participation was seen as crucial part of the planning process (van 't Klooster & Hajer, 2010). In 2006 the province asked Habiforum (in the person of investigator Habiforum & the stakeholder relation officer) to examine if Ooijen-Wanssum could be a possible location for one of these Zandmaas II projects (POW, n.d. A). This policy also paved the way for participatory processes and co-creation since the province gave the assignment to develop various solution strategies in collaboration with the area (Hajer *et al.*, 2010).

In the case of Ooijen-Wanssum water management experts decided that the levees should be removed since these created a bottleneck in the Maas. Removing the emergency levees was complex since people in the area felt safe behind the emergency levees (van den Herik & van Rooy, 2008). Part of the people still remembered the floods of '93 and '95 and were afraid they would lose protection because of the project. One of them said: "I wanted to know everything. Why are they doing this? What is in it for me? (...) High water is horrible, and you never want that again" (*interview local teacher*, 26-10-2021¹⁰). However, these levees actually increased flood damage potential and residents who cannot move out quickly face a serious risk (Wolsink, 2006). Because removing the levees would be socially sensitive, involving stakeholders and explaining them why removing the levees would be beneficial for them has been crucial in the initiation phase (van den Herik & van Rooy, 2008). It shows that problems, policies and politics are interrelated, because the policy Zandmaas II was initiated to solve a particular problem, namely improving flood safety in Limburg and in a particular political context in which the province has been one of the drivers for more participatory

¹⁰ Hereafter interview teacher

approaches in water management in Limburg (see section below for more in-depth explanation).

6.2 Perspective of public officials

Several actors and their vision on how participation should take place did have a major influence on the co-creation process in Ooijen-Wanssum. The perspective of public officials on participation and their acceptance of having other stakeholders involved is an important shaper of the co-creation process. These stakeholder characteristics are determined by other socio-political and psychological factors (Rădulescu *et al.*, 2020). Below I discuss the role of two stakeholders. I choose to elaborate on the role of the province of Limburg since this actor has been the lead partner in Ooijen-Wanssum and the role of Habiforum because of its central role during the initiation phase (van 't Klooster & Hajer, 2010, interview project director, 23-11-2021¹¹). However, it should be recognized that other stakeholders (e.g., waterboard, inhabitants, municipalities) also influenced the co-creation process.

Province of Limburg

The province of Limburg has been the lead partner and initiator of the project in Ooijen-Wanssum since they gave the assignment to Habiforum to explore the possibilities for a water safety project in the area. Because previous projects had failed because of lack of communication with inhabitants and were resisted, the province of Limburg took over the lead in water safety projects from Rijkswaterstaat (*interview J. Warner*). The province started to organize meetings with stakeholders and interest groups. Before only official organizations such as the Limburgse land en tuinbouwbond (LLTB, agricultural and horticultural organization) could participate but after these Maaswerken projects were resisted the province aimed to involve local inhabitants (*interview J. Warner*). This shift towards more participatory approaches in water management in Limburg did have an influence on how participatory processes in Ooijen-Wanssum were shaped. For example, the assignment they formulated for Habiforum was quite broad and the scope of the project was not determined beforehand, which affected the possibilities for stakeholder participation. “We talked about what we would do and how we would do it. For most projects the government determined what should be done and people can only say how it should be done” (*interview stakeholder relation officer*). This also had an impact on what participation looked like in the other phases of the project: “I think our personal vision on how to deal with people did have a major impact on the project. It has been quite important for the culture within the team at the end” (*interview stakeholder relation officer*). In his opinion it is important to listen to people and try to understand them and find a solution together (*interview stakeholder relation officer*).

Besides this, the province has been one of the actors that wanted to create an integrated project because they realized several of their ambitions could be combined in one project. In addition to improving water safety in the area, the province was also responsible to create 2,600 ha of new nature before 2027 and it wanted to change the trajectory of the provincial road through Wanssum. The province wanted to broaden the scope from a water safety project to an integrated redevelopment of the area (*interview project director*).

Habiforum

Another actor that had a major influence on how participation took place during the initiation phase in Ooijen-Wanssum was Habiforum. Habiforum was convinced that involving inhabitants from the start would improve both process and content of the project. Habiforum emphasizes the importance of participation and developed several frameworks and models to guide these participatory processes (van 't Klooster & Hajer, 2010). “The people who had

¹¹ Hereafter interview project director

to do it, made it part of their own DNA because they were very convinced that you will create better plans if you involve people from the start. We just liked it to make the best plan for this area” (*interview stakeholder relation officer*)

Habiforum had a key role in deciding which possible solution strategies would be discussed with inhabitants and because of this they had a major influence on the final solution that has been chosen. They aimed to develop innovative and sustainable ways of using space (van ‘t Klooster & Hajer, 2010). In Ooijen-Wanssum they introduced the externally developed concept of New Rivers¹².

Also, the personal ties of one of the employees of Habiforum enabled to connect the project to a national level and get funding from the national government. “I was well connected in the Hague at the time. We even could do an experiment¹³ here, even though the project was in Limburg (...). At the time Limburg was seen as the outback” (*interview investigator Habiforum, 10-12-2021*¹⁴). The reactivation of the Oude Maasarm is also a personal goal of one of the employees of Habiforum. He is living in the area and has actively promoted the idea of reopening the Oude Maasarm (van ‘t Klooster & Hajer, 2010). Their personal vision and connections did have an impact on how the participation and co-creation process took place. This example demonstrated that it matters who is working and how well they are connected with a national government shapes water safety projects and related participatory processes.

6.3 From improving water safety to redevelopment of the flood plain area

Originally the problem in Ooijen-Wanssum was framed as a water safety issue. Gradually the problem was not only considered as a water safety issue but connected to other problems like the task to create new nature and to move the provincial road. This enabled the involvement of multiple governments and paved the way for the area development. Depending on how the problem is framed particular solutions become available and this reframing of the problem from a water safety issue towards an integrated issue influenced the possible solution strategies that have been identified (*interview landscape architect, 06-12-2021*¹⁵).

The start of the project was a bottleneck in the river, which caused an increase in water level of 30 cm upstream of the area (van den Herik & van Rooy, 2008). This bottleneck was identified during the Maaswerken project. On the other side there was a natural high bank so the only way to solve the issue was by looking at the levee in Ooijen-Wanssum that was constructed after the 1995 floods. “Coincidentally there was this old branch of the river Maas, just at the place of the bottleneck, which could perfectly function as high-water retention area. We quickly realized that to be able to realize a decrease in water level the levee had to be removed and the water should be allowed to flow in the area (...) This would affect so many other functions, people and businesses so we started to talk with them. (...) During these conversations we realized that so much more than just water management should be changed. In this way it became an area redevelopment” (*interview stakeholder relation officer*).

The raising of the levees was considered to be a temporary solution that would offer false security (van den Herik & van Rooy, 2008). “We realized that it was fine for temporary measures but that it would not be the solution” (*interview project director*). Raising the levees

¹² This refers to the idea of constructing a new river branch which is the backbone for other spatial developments in the area

¹³ The experiment would involve “area concessions” in which part of the project would be developed by a market party (*interview investigator Habiforum*), see section 8.2

¹⁴ Hereafter interview investigator Habiforum

¹⁵ Hereafter interview architect

was not seen as a sustainable solution since it did not take climate change in account and the levees cannot be raised unlimited. Climate change was used to justify the choice for a spatial solution. For the investigators of Habiforum it was clear from the beginning that the levees would have to be removed in the end to create more space for the river.

The area is appointed as flood zone by Rijkswaterstaat to prevent floods further downstream since the impact of floods in the west of the country would be much bigger (van den Herik & van Rooy, 2008). This created a pressure to explore the possibility for spatial solutions since raising the levees would not a sustainable solution. "If realizing the 10 cm decrease in water level would have been easy, we would not have managed to create such a big development" (*interview stakeholder relation officer*). Other policies and regulations (e.g., appointing the area as storage area) affected the solutions that were available to solve the water issue in the long term. It shows that these projects are embedded in other political processes and policies.

Project Boundaries

One of the factors that made it possible to change a water safety project to redevelopment of the area was the flexibility of the assignment of Habiforum. There were no clear project boundaries or conditions. The assignment was to investigate what kind of solution would be promising and feasible in the area without defining beforehand what promising and feasible exactly would entail, except for improving water safety (van 't Klooster & Hajer, 2010). "We gave ourselves the freedom to build a bigger project and find allies. We also got that freedom from our client, the province of Limburg, to create a project as big as necessary. (...) Often a project just starts with this should be done with this amount of money. (...) Here the way the project started was different. We had the task to realize 10 cm drop in water level and we just took a look in the area. What would happen if we wanted that and what could be part of this development?" (*Interview stakeholder relation officer*).

From the beginning the investigators from Habiforum started to talk with the most important landowners and local administrators, Rijkswaterstaat and the local waterboard. The aim of these talks was to find allies to support the reactivation of the oude Maasarm. However, this was not easy since these governments have their own issues and ideas about possible solutions. For example, the municipality of Wanssum wanted to improve traffic safety in the city center (van 't Klooster & Hajer, 2010; *interview stakeholder relation officer*). Part of their stakes was conflicting with the ambition to realize more space for the river. However, the province asked Habiforum to keep in mind the different interests and wishes of the stakeholders and to get and keep the different stakeholders involved. This forced Habiforum to think of new solution strategies in which the different issues of the various stakeholders would be connected to solving the water safety problem in the area and opened up the possibility for an integral project (van 't Klooster & Hajer, 2010). According to Investigator Habiforum this was crucial: "We got and took the space to do this in Ooijen-Wanssum. Otherwise, nothing would have happened. Also, in Limburg they wanted to do things differently. The stakeholder relation officer and I got the opportunity to do this together" (*interview investigator Habiforum*).

The choice for a spatial solution in the area by reactivating the oude Maasarm did have a big impact on participation and co-creation. Because of this choice multiple stakeholders would be affected. "The moment you choose this solution, you go inland. You give space to the river in a place where people live, work and recreate. At that particular moment other interests start to play a role. The interests of the municipalities, they own land there, Rijkswaterstaat is responsible for water safety but also the province who owns the provincial road that blocks the project. This is how it has grown into a redevelopment of the area. There are multiple owners with multiple interests. Together they made one project" (*interview*

project director). The choice for this particular solution created a pressure to work together with different governments and actors living in the area.

Logical solution?

This choice is presented as a logical solution: “From the water safety issue, we automatically end up talking with these governments” (*interview stakeholder relation officer*). However, these governments have their own issues and agendas. For example, at a certain point Rijkswaterstaat did not want to pay anything, even no small process costs. At the end the employees of Habiforum were able to convince Rijkswaterstaat to continue the process. (*interview investigator Habiforum*). Not all government parties have been committed to the project from the beginning. In the beginning the waterboard decided various times that they no longer wanted to be part of the project. According to the project leader of the waterboard they did so because “There was no direct interest. In our opinion the project and construction was the responsibility of Rijkswaterstaat” (*interview waterboard*, 16-11-2021¹⁶). However, at a certain point they realized that they should be involved since when the project would be finished the waterboard would be responsible for the maintenance of the primary flood defense structures. “Otherwise, we would get something in 2020 which we did not want but have to maintain” (*interview waterboard*).

It shows that if a party has no interest in the project or they feel they don't have a direct interest, collaboration is complex, and they are likely to walk out of the project (*interview waterboard*). It highlights that forming a network of stakeholders that have an interest in the problem is crucial for the start of co-creation processes (Rădulescu *et al.*, 2020). Also, some actors feel excluded. “They set up the board (*stuurgroep*). Staatsbosbeheer has not been asked for this. (...) Because of our position as landowner and our mandate we were involved. The board decided what should be done and then you end up with crazy things” (*interview Staatsbosbeheer*, 26-11-2021¹⁷). It highlights that these spatial projects are complicated processes that are contested and cannot be fully controlled. This implies that it is important to critically look at these participatory processes while they unfold (*interview investigator Habiforum*).

6.4 Reactivating the Oude Maasarm

The reopening of the Maasarm is presented as logical and natural solution. “From the beginning we worked according to the DNA of the river, we looked into what this place would demand” (*interview stakeholder relation officer*). According to the project leader of the municipality of Horst aan de Maas this choice was just logical: “When you look at the elevation maps of the area, you clearly see the old branch of the Maas. When you are thinking about improving the safety of the area you automatically end up with this location” (*interview project leader Horst aan de Maas*, 15-11-2021¹⁸). However, it was not so logical that this solution would be implemented. In Ooijen-Wanssum several actors within the province advocated for area redevelopment, whereas within the waterboard people preferred the option to raise the levees and Rijkswaterstaat controlled the winter bed (*interview Stroming*). “There are some forces that pushed the project in this direction. How this exactly goes cannot be predicted, it just happens and sometimes things go in a very different direction than planned. In Ooijen-Wanssum it went in the right direction at the end” (*interview Stroming*). It shows that although these solutions are presented as natural, they are the outcome of a political process in which various actors advocate for different solution strategies. Presenting the solutions as natural creates an image of unproblematic

¹⁶ Hereafter interview waterboard

¹⁷ Hereafter interview Staatsbosbeheer

¹⁸ Hereafter interview Horst aan de Maas

cooperation and can be a strategic tool to reduce resistance. However, this solution emerged in a particular moment in time and in a particular political context (*interview architect*).

Ideas for a new river

The idea of the reopening of the Oude Maasarm was developed by InnovatieNetwerk¹⁹, a network for innovation in the water sector in collaboration with Bureau Stroming that focused on the technical side of the concept. They appointed Ooijen-Wanssum as one of the possible locations to implement their idea of creating new rivers (interview S. van 't Klooster, 01-11-2021²⁰). During the initiation phase several other options were explored (van den Herik & van Rooy, 2008). This solution strategy significantly differed from the other solution strategies in terms of process. All other solution strategies were developed in collaboration with inhabitants but the reactivation of the oude Maasarm has been developed by several experts. The other solution strategies were developed in a more bottom-up way. After various 'kitchen table conversations', meetings with residents and interest groups, the ideas and expectations were concretized in various solution strategies (*interview S. van 't Klooster*).

The idea of the reactivation of the oude Maasarm is based on the idea of New Rivers, in which the construction of a new river branch is seen as the backbone for other spatial developments in the area (e.g., nature, recreation) (Hajer *et al.*, 2010). The idea is connected to the discussions around spatial measures to give more space to rivers. It has been developed after the "Lonkend Rivierenland" (*Beckoning River country*) plan of Staatsbosbeheer, which involved nature development in de Betuwe (InnovatieNetwerk, 2004; van 't Klooster & Hajer, 2010). This gradually changed into the idea of new rivers. Bureau Stroming explored the possibilities to implement this in the Betuwe and to be able to upscale this idea they wanted to investigate other locations to implement a new river (van 't Klooster & Hajer, 2010). "In Ooijen-Wanssum they found the perfect area in which their idea could become reality" (*interview S. van 't Klooster*). By actively promoting this idea both at national level and more local, this solution became available (*interview Stroming*). The introduction of this external concept in the area did have a major impact in what the project looked like in the end.

However, these ideas can only be implemented if they resonate with policy makers and other actors in the area. The introduction of the concept of new rivers in Ooijen-Wanssum is related to the personal vision of the stakeholder relation officer of Habiforum on this idea. During the initiation phase InnovatieNetwerk and the stakeholder relation officer were connected. The stakeholder relation officer became enthusiastic about the idea of creating a new river in Ooijen-Wanssum since it also fitted very well with his personal goal of removing the levees that closed off the oude Maasarm and it would create new possibilities for the area (Hajer *et al.*, 2010; van 't Klooster & Hajer, 2010).

However, for Habiforum it was important to develop this idea in close collaboration with the area. Therefore, they decided to present this idea to stakeholders (van 't Klooster & Hajer, 2010). The people in the area embraced this solution. People recognized something in the story of the new river and adapted it to the area (*interview S. van 't Klooster*). The external concept of new rivers had been rewritten and adapted to the local context. Nevertheless, after the positive beginning this idea was resisted by residents. During the planning procedure InnovatieNetwerk published a book in which they presented their idea of a new

¹⁹ The organization no longer exists. InnovatieNetwerk is a collaboration between different people from businesses, civil society, science and government. It aims to initiate and guide system innovations in spatial planning, water, sustainable agriculture and other areas. The network has been initiated by the department of Agriculture, Nature and Food Quality (InnovatieNetwerk, 2004).

²⁰ Hereafter interview researcher. She is a former researcher from UvA on co-creation in Ooijen-Wanssum

river in Ooijen-Wanssum. However, this idea was very different from how people in the area understood the idea of a new river. For example, an idea for a high-end housing project of 700 houses was added. It created a negative image of the concept in the area (*interview S. van 't Klooster*). The book reflected the story of the new river as constructed by the experts and because of this people in the area felt threatened since people from outside would determine what the area would look like (*interview S. van 't Klooster; van 't Klooster & Hajer, 2010*). The experts did not consider regional interests and expectation, because they were not involved in the planning process that was taking place in the area (*interview S. van 't Klooster*). The concept of new rivers, which has been an opportunity for the project at first became a threat since people distrust the idea of the new river (van 't Klooster & Hajer, 2010).

The stakeholder relation officer decided to reframe the strategy to 'verruiming' (*expansion*). This would enable him to circumvent the discussions around the plan to build 700 houses which was resisted in the area but rescue the main idea of solving a water issue by creating new river branch (van 't Klooster & Hajer, 2010). The idea was also slightly adapted. Originally it involved the idea of permanently flowing branch of the river to increase flow capacity during high waters (van den Herik & van Rooy, 2008). Several other options were added, which opened up the possibility to discuss various options for what giving space for the water by removing the levees could look like (van 't Klooster & Hajer, 2010).

Climate buffer

The idea of reopening the oude Maasarm is also connected to another project in the area. Staatsbosbeheer constructed a climate buffer in Ooijen-Wanssum. Climate buffers are areas where natural processes help to reduce the impacts of climate change by retaining water, reducing heat and take up CO₂ and at the same time using the area for recreation or nature development (*interview Stroming; Natuurlijker Klimaatbuffers, n.d.*). This idea of climate buffers was developed by Bureau Stroming in collaboration with Staatsbosbeheer (*interview Stroming*). The department of Infrastructure and Environment created a fund for nature organizations to build climate buffers and one of these projects was implemented in Ooijen-Wanssum. The construction of the climate buffer was finished in 2013 before the oude Maasarm was reactivated. This project could be implemented faster because it was constructed on land owned by Staatsbosbeheer, whereas in the redevelopment of Ooijen-Wanssum much more stakeholders were involved (Vermeulen, 2013). However, this project would only work when the oude Maasarm would be reactivated and the levees would be removed. Staatsbosbeheer was already anticipating on the reactivation of the Oude Maasarm. In this way, the implementation of this project created a pressure for the solution strategy of reopening of the oude Maasarm (Vermeulen, 2013; *interview Stroming*).

The project of Staatsbosbeheer served to defend the interest of Staatsbosbeheer and to create a pressure for combining water safety and nature development. "Besides becoming part of the winterbed again, Staatsbosbeheer wanted the area to become nature. They were one of the main landowners. The fear was, we might be able to convince people that it should become part of the winterbed again but if the area can be flooded again, it might have to be open grass land because vegetation will block the water. We decided to construct a trench (*geul*) on the land of Staatsbosbeheer. At the time we were not entirely sure if the oude Maasarm would be reactivated. We just developed the trench with the idea that it would be more logical to do so (...). We also wanted to prepare people for the idea that if the area would be part of the riverbed, it still could be nature with a mix of rough vegetation and the trench" (*interview Stroming*). This example highlights that other projects in the area can push for a particular solution strategy and create conditions to which the project has to relate.

The relations between different projects are dynamic and inherent to conflict and contestation. The project of Staatsbosbeheer also created friction between the two projects because the land of Staatsbosbeheer was also part of the redevelopment of Ooijen-Wanssum. Staatsbosbeheer is frustrated about the way they were involved in the project Ooijen-Wanssum. According to Staatsbosbeheer the project board said: "You are one of the landowners and we are going to redevelop part of your land. But we already did that. However, they had a different and, in their opinion, better idea. (..) Our water law permits were overruled by the water law permits of their project." (*interview Staatsbosbeheer*). For the project all land that was affected became part of the permit of the province, which created a complex situation since the province was not the owner of the land (*interview Staatsbosbeheer*). Different stakeholders have their own projects in the area and compete for influence. Some actors wanted to be involved but have the idea that they were not able to participate in the way they wanted to be part of the project. They felt they were excluded because "we are critical about the project and ask difficult questions, they did not like that" (*interview Staatsbosbeheer*).

6.5 Other drivers

Several other vectors can be identified that affected how participation was organized in Ooijen-Wanssum.

Funding

Another factor that shaped the participation project was the availability of funding for the participation process. "We had a lot of money for processes (*from the province*)" (*interview investigator Habiforum*). Because both time and money were available it was possible to start with talking with stakeholders.

The affordability of the measures has been decisive for the actual implementation of the project in Ooijen-Wanssum (van den Herik & van Rooy, 2008). "You present you plan to the department and at the end you have to go round with the collection box." (*interview investigator Habiforum*). Finding funds for actual implementation has not been an easy process and the province of Limburg actively lobbied at national level for funds. The most convincing argument has been that in 2011 Limburg still was not protected against floods like '93 and '95 (*interview Dijkgraaf*). The protection standards were used to access funding for Ooijen-Wanssum.

The availability of funding also shaped how the project would look like. The department of Agriculture, Nature and Food created a fund for the development of nature in riverine areas, the so called Veermangelden. The province of Limburg signed a contract to develop 460 hectares of riverine nature in 2015. The project in Ooijen-Wanssum provided an opportunity to realize this assignment and provided access to funding (van den Herik & van Rooy, 2008).

Local culture

Understanding local culture is crucial since it affects how to communicate with people (*interview investigator Habiforum*). In Limburg communication is relatively informal compared to other parts of the country. The communication culture in Limburg created openings to implement things that would not have been possible in other parts of the country and for example created an opening towards more participatory approaches (*interview J. Warner*).

Although the project has been resisted, most actors (e.g., Habiforum, inhabitants) feel that resistance was relatively low regarding the size of the project. According to a local teacher, the culture in the area is one of the reasons for this: "The people on the other side (*of the Maas*) are more vocal. Here it is more a rural area, people are more relaxed, we don't want to make trouble" (*interview teacher*). Another factor related to local culture is the acceptance

of a project initiated by actors from outside. In Ooijen-Wanssum people were willing to participate in a project. “Of course, not for any price but they wanted to collaborate (...) I was afraid they would not accept someone from outside (...). In Ooijen-Wanssum they were very pragmatic, they wanted the problem to be solved. If people are not open to it, it is impossible *(to implement a project)*” (*interview investigator Habiforum*). Because local culture is an important factor, it is impossible to implement the same process in another location (*interview investigator Habiforum*).

6.6 Conclusion

Using the concept of window of opportunity for change to analyze the initiation of the project in Ooijen-Wanssum shows that when problems, policies and politics come together it can create a possibility for redevelopment of the area. This research also shows that co-creation does not start with the actual project but starts way earlier. The floods in '93 and '95 in the area led to a feeling of urgency to improve water safety in Limburg and improving flood protection was considered to be a problem that should be solved. A shared perception of the problem has been an important driver for the project in Ooijen-Wanssum. The floods led to the development of new flood risk management policies, which in the end resulted in the development of the Zandmaas II policy by the province of Limburg. This Zandmaas II policy provided the opportunity to implement a spatial solution in Ooijen-Wanssum. This happened in a context in which several developments (e.g., failure of other Maaswerken projects) demanded a more participatory approach. It shows that problems, policies and politics are related and interact in complex and diverse ways. It shows that these processes are context specific and shaped by many factors. These participatory and co-creation processes intersect with other political processes, institutional arrangements and power relations at different levels. Both regional and national factors shaped participation. At national level the concept of new rivers has been developed by InnovatieNetwerk, which resulted in the introduction of a new solution strategy in Ooijen-Wanssum. This concept was translated to the local context and has been connected to the project of Staatsbosbeheer to create a climate buffer in the area. Not only the socio-economic and political context matters, but also personal characteristics have major impact on co-creation. It matters who is involved. The project in Ooijen-Wanssum is connected to personal visions on participation and preferred solutions to improve water safety of the investigators of Habiforum and the province of Limburg.

7. Co-creation and Participatory decision-making

In this chapter I will look into what participation and co-creation looked like in Ooijen-Wanssum. In this chapter I will answer the second and third research question: *How do different stakeholders participate in the different phases of initiation, plan development and implementation of the project and how are decisions made in spaces for co-creation?*

First, I will look into how the preferred strategy for the project was chosen and how a network of stakeholders was formed around the water safety problem in the area. After that I will elaborate on various platforms for participation during the plan development phase. I will discuss non-participation, resistance to the project and the process of land acquisition among others. Lastly, I will discuss participation during the implementation phase. See the table below for an overview of participation in Ooijen-Wanssum in different project phases.

Table 3 Overview of participation in Ooijen-Wanssum

| Phase | Initiation (2006-2012) | Plan development (2012-2016) | Construction (2016-2020) |
|---------------------------------------|---|--|---|
| Key events | 2006: start investigation Habiforum 2008: symposium | 2012: Signing board agreement 2016: Provincial Zoning Plan approved | 2016: Signing agreement implementation 2017: start construction 2020: end of construction |
| Involved stakeholders | Directly affected inhabitants, public officials, Habiforum & Bureau Stoming | Inhabitants of project area, POW, public officials | Directly affected inhabitants, MooderMaas, POW, public officials |
| Platforms for participation | Kitchen table conversations, meetings with stakeholders, symposium | Village council meetings, face-to-face contact with projectbureau, interest groups, | Design workshops, village council meetings |
| Actor organizing participation | Province of Limburg, Habiforum | POW | MooderMaas, POW |
| Influences on participation | Knowledge on flood safety and solution strategy, emphasis on creating consensus, open communication | Willingness and ability to participate, resistance to project, buying of land, decision-making in stuurgroep | Collaborative networks between MooderMaas, landscape architect, POW and inhabitants, personal characteristics of stakeholders, way of decision-making and integrated project budget |
| Outcomes | Choosing of preferred strategy, establishment of POW | Initial designs, selection of construction company, provincial zoning plan | Construction of project |

7.1 Initiation phase: Choosing a preferred strategy 2006-2012

In the case of Ooijen-Wanssum the province wanted to explore the possibilities to implement a flood safety project in the area. Because other stakeholders only participated after an invitation of Habiforum, on behalf of the province participation can be categorized as invited participation (van Buuren *et al*, 2019). The decision which actors should be invited is an important factor in shaping the participation process (Rădulescu *et al*, 2020). In the case of Ooijen-Wanssum the investigators of Habiforum had a crucial role in shaping the participation process since the province outsourced participation to Habiforum. They decided not to start a formal process with citizen consultations and talk directly to affected stakeholders individually (van den Herik & van Rooy, 2008). Together with these stakeholders they designed a preferred strategy. This choice affected the possibilities for citizen involvement in the beginning since only the people who were directly affected could participate. This determines whose voice has been heard in the development of the preferred strategy since other actors only have been involved after the preferred strategy was already chosen. It shows that outcomes of participatory processes are shaped by the design of the process itself (Rădulescu *et al* 2020).

7.1.1 Collaborative networks: Separate networks of stakeholders

Habiforum focused on creating involvement of both inhabitants and governments. “We started with many conversations, from the local Chinese to the supermarket and especially with farmers. (...), we had to get them involved” (*interview investigator Habiforum*). In the beginning local inhabitants were involved via the one to one ‘kitchen table conversations. These meetings were used to develop several strategies by Habiforum. The investigators of Habiforum discussed these strategies with government officials. Later various meetings in a local restaurant with directly affected stakeholders were organized to discuss these strategies in more detail. Organizing these meetings and connecting different individual stakeholders created the possibility to build a network of stakeholders (Rădulescu *et al*, 2020). However, in the case of Ooijen-Wanssum two separate networks were formed, one with Habiforum and inhabitants and another network with Habiforum and involved governments. Habiforum was the only actor communicating with both groups (van ‘t Klooster & Hajer, 2010). Creating a diverse network of stakeholders both in terms of personal characteristics and expertise is considered to be crucial in co-creation since innovation is considered to be the result of interdisciplinary interaction (Rădulescu *et al*, 2020). Creating two separate networks in the case of Ooijen-Wanssum resulted in limited the possibilities for interaction between different stakeholders and therefore, affects the possibilities for co-creation and innovation. One of the reasons for these separate networks was that the investigators of Habiforum did not want the idea of new rivers to be seen as the idea of InnovatieNetwerk/Stroming but as an outcome of the exploration process although inspired by InnovatieNetwerk/Stroming (van t’Klooster & Hajer, 2010). Besides this, administrators are often not involved in these processes with the area and their presence often only symbolic. This was also an issue in Ooijen-Wanssum (*interview S. van ‘t Klooster*).

Habiforum has played a mediating role and connected the issues of the people in the area with the plans of the various involved governments. Because there was no direct contact with government officials several inhabitants felt not heard during the initiation phase despite regular personal communication with one of the investigators of Habiforum (van ‘t Klooster & Hajer, 2010). In this case participation was largely organized by an outside actor and although people had good contact with one of the investigators of Habiforum, they felt excluded from the process. This example shows that creating a direct dialogue between responsible governments and inhabitants is important for inhabitants to feel heard (*interview S. van ‘t Klooster*).

7.1.2 Decision-making

In 2006 during a symposium with stakeholders the strategy “New Rivers” has been appointed as preferred strategy. The symposium is an example of direct involvement of inhabitants in decision-making. During this symposium 6 strategies were presented. The investigators of Habiforum facilitated the meeting and inhabitants, civil society organizations and representatives of governments were involved (van den Herik & van Rooy, 2008). Habiforum was responsible for mediating the dialogue between citizens and governments organizations. It was also the first-time citizens and government representatives directly talked with each other (van ‘t Klooster & Hajer, 2010). During this symposium the impact of the strategies for diverse sectors (water, agriculture, nature, economy, recreation and livability) was evaluated. The focus was on feasibility, affordability and sustainability of each of the strategies (van den Herik & van Rooy, 2008). The evaluation method that was applied has been developed by Habiforum (van ‘t Klooster & Hajer, 2010). The participants (*directly affected stakeholders*) voted for the preferred strategy. According to one of the investigators of Habiforum the symposium “was a bloody serious meeting, at the end they had to say what they (*directly affected stakeholders*) wanted (...) I think there wouldn’t have been a project if they did not want it.” Some actors had a crucial role in this decision-making process: “An active farmer with a lot of land has been quite crucial in the process. In the beginning he was very critical, later he became positive critical. During a crucial moment at the symposium, he said: we should go for the most sustainable strategy” (*interview investigator Habiforum*).

However, after the symposium the involvement of inhabitants in decision-making changed. The symposium with the residents has been a more symbolic meeting to close the process with the area since the actual decision to implement the strategy preferred by the inhabitants was taken later without consultation of people in the area. The province of Limburg evaluated the sustainability of top three of preferred strategies. Another symposium in which only experts were involved was organized by the province to evaluate the sustainability of the different strategies (van ‘t Klooster & Hajer, 2010). Besides this, a consultancy company (DHV) evaluated the affordability of the different strategies (Provincie Limburg, n.d. B). After this the strategy was further developed and in 2007 the board decided to conduct a plan study (van ‘t Klooster & Hajer, 2010). During this phase some inhabitants felt excluded from the process because they were not informed anymore (van ‘t Klooster & Hajer, 2010).

7.1.3 Participation

Knowledge and participation

Despite active involvement of citizens, the participation process has been a one-way relation in which Habiforum informed the people and presented possible solutions strategies on which inhabitants could react. One of the reasons for this is knowledge on flood safety, which has a central role in the participation process. In general, there is a bias towards expert and scientific knowledge, which has an impact on participation processes (Roth *et al.*, 2021). There is a knowledge gap between experts and citizens and when people are confronted with plans for their area, they often start from an unequal knowledge position. “They don’t know anything about water and suddenly they have to find knowledge to be able to support their claims.” (*interview D. Roth*). In Ooijen-Wanssum this unequal knowledge position also played a role in the participation process. Habiforum identified lack of knowledge as one of the barriers for stakeholder participation (van den Herik & van Rooy, 2008). Also people in the area felt that lack of information limited their possibilities to participate (van ‘t Klooster & Hajer, 2010). Habiforum actively worked on raising awareness on the water issue in the area. During meeting with people that would directly be affected by the project Habiforum wanted to raise awareness on the “problem” to create a feeling of urgency to reopen the oude Maasarm (van ‘t Klooster & Hajer, 2010). They used elevation maps of the area to explain

the problem. “You get some old maps, show them what the area looked like, what we have changed and what the consequences are of these changes, because we changed too much” (*interview investigator Habiforum*). According to the investigator of Habiforum it is important to start with maps because it enforces authority. At the same time maps provide a tool to explain the problem and help people visualize what a specific solution can look like (*interview project director*). “After seeing the maps people realized what we have changed, we cut off the river and because we build in that area, we end up with wet feet” (*interview investigator Habiforum*). However, the choice for this instrument is not neutral and maps can provide a way to legitimize certain solution strategies (Gralepois, 2020). In the case of Ooijen-Wanssum the elevation maps supported the idea of reactivating the oude Maasarm (see figure 5). In this map the oude Maasarm and the Maas are colored blue. The oude Maasarm is visualized as part of the river, which legitimized the choice for the reactivation of the oude Maasarm.

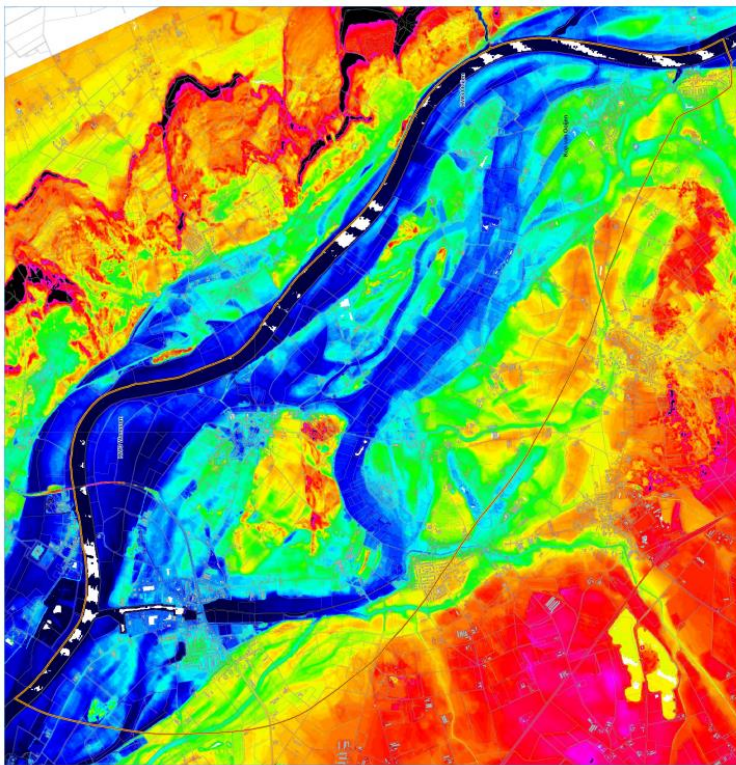


Figure 5 Elevation map of project area

Source: [https://www.ooijen-](https://www.ooijen-wanssum.nl/gebiedsontwikkeling/documenten-en-kaarten/)

[wanssum.nl/gebiedsontwikkeling/documenten-en-kaarten/](https://www.ooijen-wanssum.nl/gebiedsontwikkeling/documenten-en-kaarten/)

Creating consensus

Also a lot of emphasis was put on creating consensus. For example, during meetings with stakeholders like Staatsbosbeheer and a local sand wining company the focus was on mobilizing these actors for the idea of the reactivation of the oude Maasarm (van 't Klooster & Hajer, 2010). Van den Herik & van Rooy, 2008 state that the preferred strategy was chosen unanimous. This focus on consensus may conceal important differences, contradictions and conflict during the process of choosing the preferred strategy (cf. Roth *et al*, 2017). Usually when a project is finished, this side of the story is missing (*interview D. Roth*). According to van 't Klooster & Hajer, 2010 several inhabitants in Ooijen-Wanssum felt that their only option was to accept the option since they felt the project would be implemented anyway. This was also emphasized in one of the interviews: “There were various options and in our opinion, we choose the one best for us. You can fiercely resist the

project, but that is counterproductive” (interview dairy farmer Broekhuizenvorst, 09-11-2021²¹).

Open communication

In Ooijen-Wanssum the stakeholder relation officer aimed to create an open way of communication since he firmly believes that stakeholder involvement will create better and more innovative solutions. “We created support for the project by communicating very open and transparent with the area from the beginning about our task, about our issues, investigating if a solution would work or not. (...) to make sure that they know me, and I exactly know their situation and only after that we developed the plan” (*interview stakeholder relation officer*). Open communication and having an empathic discussion in which stakeholders share their desires and interest is important in co-creation. This can contribute to creating a feeling of ownership of the problem and process (Rădulescu *et al*, 2020). The investigator of Habiforum considered this feeling of ownership as crucial for the co-creation process to emerge. “We entered the process with nothing more than a panorama of the future, of what it could look like here and gradually it developed. We drew attention to several strategies, and these grew with the inhabitants and entrepreneurs” (*interview investigator Habiforum*). Using the input of inhabitants in designing the co-creation process is not only important to keep them involved but also to create innovative solutions (*interview S. van ‘t Klooster*). This can be done in various ways and therefore, the co-creation process cannot be fully designed beforehand. “One has to act on what happens; it is important to have a clear goal. This implies that you have an idea about what it could look like and in what time. The process cannot continue forever and therefore some clearly defined steps and phases are necessary” (*interview S. van ‘t Klooster*). In Ooijen-Wanssum the scope of the project was not defined beforehand, and the participatory process started before the project had a formal status (personal communication stakeholder relation officer via email, 25-01-2022). Because of this the investigators of Habiforum were able to design an open planning process, which created possibilities for co-creation.

Non-water related benefits

The project would create new opportunities for economic development, nature and recreation and this contributed to higher acceptance of the project and reduced resistance. According to the project leader of the waterboard, they actively thought about:” How are we going to implement the reactivation? What other solutions are there in the area so people in the area do not feel like they will be used as a drain? How are we going to develop the area in such a way that they also get something back, for example nature or recreation, and not only lose something. It should be a package and people should think: We lose something, but we are also getting back a lot” (*interview waterboard*).

Because the water issue affected many people and their businesses, solving the water issue was an attractive option for them. “There was also an economic side. The entire area was locked because of the high-water safety. No single square meter could be built anymore because it was appointed as water storage area (...). The project would create new possibilities for economic development and because of this a big part of the business sector was in favor of the project, since it would bring new perspectives” (interview chair village council Broekhuizenvorst, 16-11-2021²²). Expansion was not allowed because the area was considered as part of the winter bed of the Maas. Every construction is considered as obstacle for the drainage of water. For any construction work people need to apply at Rijkswaterstaat for a water permit. However, it was almost impossible that this permit would

²¹ Hereafter interview dairy farmer Broekhuizenvorst

²² Hereafter interview village council

be granted since expensive compensation measures were mandatory (POW, 2015 B). “There were many companies that could not develop just because of the policy “Grote Rivieren” being applied in this area. Removing this policy with the project would result in 51 companies that could expand their sheds and stables. About 51 companies were just locked” (interview Dijkgraaf, 01-12-2021²³). Also housing development in the area was restricted. Especially entrepreneurs in the area realized that a water safety project could solve part of their issues in the area and this contributed to a feeling of urgency in the area (van den Herik & van Rooy, 2008). This shared feeling of urgency is crucial to be able to implement a project (*interview investigator Habiforum*).

7.2 Plan development 2012-2016

After the signing of the board agreement in 2012 the plans for Ooijen-Wanssum have been further developed to prepare for implementation. This phase involved research on the environmental impact of the project, tendering the project to a construction company, formalizing the project and the quality requirements in the provincial zoning plan and the acquisition of the required land (POW, 2015 B & personal communication stakeholder relation officer via email, 25-01-2022). During the plan development phase also people who would not be directly affected by the project were involved. For some people this was the first time they heard about the project (interview excursion leader Wanssum, 01-12-2021²⁴).

7.2.1 Platforms for participation

In Ooijen-Wanssum the projectbureau created several platforms in which stakeholders could exchange their views on the project, which are discussed below. These platforms provided a way to exchange between the project bureau and inhabitants. Within the projectbureau representatives of the involved governments worked together to create a shared vision for the area.

Village councils

Participation was mainly organized as an invited participation. The village councils in Broekhuizenvorst, Wanssum and Blitterswijck played an important role in the co-creation process and were also involved during the initiation phase. The village councils were informed about the project by the municipality and had regular meetings with the aldermen (*wethouders* in Dutch; *interview village council*). The village councils had a facilitating role and organized information meetings when the contractor or projectbureau asked them to do so. By organizing these meetings instead of sticking to formal procedures, the projectbureau tried to make the decision-making process more accessible (*interview Horst aan de Maas*). During these meetings the projectbureau would present their plans and designs. It provided an opportunity for local inhabitants to react to these plans and articulate their interests and desires. The village councils also have been part of the tender committee. “Up to the tender we had an influence on what it would look like, which is unique” (*interview village council*). Residents were directly involved in the tender procedure because people working on the project believed that residents should be involved in every step taken. It highlights that the vision on stakeholder relation management has a major influence on what the participation process looks like.

Besides these more formal ways to inform inhabitants, a committee of the village council approached individuals to get new ideas and discuss the plans (MiniKoerier, 2020). The village councils had a bridging role between the projectbureau and inhabitants. The village councils are rooted in the communities and people approached the village council when they

²³ Hereafter interview Dijkgraaf

²⁴ Hereafter interview excursion leader

had any issue concerning the project. For example, when a former teacher had a conflict with the projectbureau she asked the village council to support her (*interview teacher*).

The three village councils worked together and discussed beforehand how they would react to plans of the projectbureau. By doing so, they wanted to increase their influence on the final requirements for the contractor (*interview village council*). For example, the village councils successfully tried to minimize traffic in the villages during construction and promoted the use of ships for transportation (*interview village council*). This shows that connecting to other organizations can be an effective strategy to get recognized by the government and can strengthen local actors capability to engage in public policy processes (van Buuren *et al*, 2019).

Face-to-face contact with projectbureau

In Ooijen-Wanssum the projectbureau engaged different strategies for developing trustful relationships with and between the various involved actors, with the hope that this would help to prevent conflicts (cf. van Buuren *et al*, 2019). They established the projectbureau in the project area itself and consultation hours at the projectbureau created face-to-face contact. This contributed to project acceptance. “They created a lot of goodwill and were the representation of the governments, because they were in the area and knew what was going on. They would make sure complaints or questions ended at the right place within the municipality or the waterboard for example” (*interview village council*). Understanding the social ties within the communities is crucial since some local actors have a big influence on what the community thinks about the project. However, these local structures are often neglected (*interview J. Warner*). According to the stakeholder relation officer “you should be home in the capillaries of the area, knowing what everybody thinks, and they have to know what you think” (*interview stakeholder relation officer*). In the stakeholder relation officers’ opinion, it is crucial to make it personal and be approachable. “Although at the end of the day you are a public official, you have to ensure that you are approachable and that the project has a human side and scale” (*interview stakeholder relation officer*). It involves picking up the phone outside office hours and having your office in the area (*interview stakeholder relation officer*).

Interest groups

Various people also participated in one of the nine interest groups, which were organized around several themes (e.g., recreation, agriculture, nature, etc.). In each of these interest groups one of the members was a representative of the village council. These interest groups would meet every other month and the projectbureau would present their plans and designs and people could react. The next meeting they were updated by the projectbureau on what has been done with their feedback (*interview excursion leader*). Creating these interest groups provided a way to organize participation and involve the directly affected stakeholders, which are usually less well organized than the more institutionalized stakeholders like the LLTB (Roth *et al*, 2017).

The projectbureau asked several people to participate in these interest groups. The excursion leader from Wanssum became part of the interest group after he saw the design for the new provincial road. He would be living next to this road and did not agree with the design. For him participating in the interest group was a way to be able to have a say in the final design of the road (*interview excursion leader*). “It went very well, because we were seen as full conversation partners and our ideas and suggestions were taken seriously” (*interview excursion leader*). For another dairy farmer and excursion leader participation in an interest group was a way to be able to influence decision making. “I don’t agree with the project, but I wanted to be part of it and I learned that you should be part of an interest group in that case. From the beginning it is known that the project would be implemented anyway

so one has to investigate if plans can be adjusted and that you come out in a reasonable way” (interview dairy farmer and excursion leader Broekhuizenvorst, 30-11-2021²⁵). Despite not agreeing with the project, the excursion leader wanted to be part of the co-creation process and decided to collaborate. This example shows that the direct physical impact of the project, personal beliefs on the importance of collaboration and possibilities for resistance can be a motivation to participate in co-creation processes.

According to one of the inhabitants creating these interest groups was also a way to limit resistance (personal communication moved-out inhabitant, 16-11-2021²⁶). Van Rooy & van den Herik (2007) stated that the interest groups contributed to project acceptance. “There are conflicting interests (...) and within the interest groups choices and considerations will be made” (van den Herik as cited in Peel&Maas, 2013, par.1). It shows that participatory processes in Ooijen-Wanssum is considered to be a tool to contribute to project acceptance (Buletti Mitchell & Ejderyan, 2020).

Besides these interest groups that were set up by the projectbureau also more institutionalized interest groups like the LLTB organized their own meetings. Traditionally these “organized interest groups have an institutionalized say in political decision-making” (Roth *et al*, 2017:54). The LLTB aims to support their members with public responses to the plan by informing them and providing access to various experts to discuss the impact of the project and the provincial zoning plan (interview board member LLTB, 09-12-2021²⁷; LLTB, 2015). For example, during the information meetings lawyers were present. To be able to effectively participate in co-creation processes it is important for citizens to connect to people who could discuss with engineers and planners and bring counter arguments into the discussion (*interview D. Roth*). The LLTB enabled farmers to connect with these experts.

The LLTB was also able to pressure the provincial government to conduct an agricultural impact analysis besides the environmental impact analysis. In this report the impact of the project on agriculture in the area and possibilities for compensation were investigated such as improving the quality of agricultural land. It has been the first project in which an agricultural impact analysis has been conducted. However, not that much has been done with this report according to the LLTB (*interview LLTB*)

7.2.3 Decision-making

After the signing of the start agreement in 2012, a coalition of the involved governments was formed. Interdependence and common goals are crucial for successful co-creation between government organizations (personal communication stakeholder relation officer via email, 25-01-2022). Because of political and time pressure to implement certain programs and changing policies after elections defining this common goal is not easy in practice (*interview waterboard*). However, in Ooijen-Wanssum the governments were able to create a common goal. One of the reasons for this is that because the scope of the project was not defined beforehand and the project was not formalized yet, there was no political pressure. This created the possibility to form a coalition of 5 governments in which decisions about the project were made. The government officials also realized that they depended on each other. “We realized that if we do not reach the end together, nobody will reach it. It is the basis of the project. We tried not to decide based on our own interests but from the common interest” (*interview waterboard*). Administrators transferred part of their responsibilities to the project bureau, and this enabled the collective decision making within the stuurgroep (*interview project director*). The way interaction between different government authorities is structured

²⁵ Hereafter interview farmer & excursion leader

²⁶ Hereafter interview displaced inhabitant

²⁷ Hereafter interview LLTB

has a big influence on how co-creation and participation takes place (van Buuren *et al*, 2019).

The elected officials in the stuurgroep were given the mandate by their organization to decide on Ooijen-Wanssum (*interview Horst aan de Maas*). The stuurgroep was supported by a group of government officials. They would advise the stuurgroep. The members of the stuurgroep regularly changed after elections. These changes after elections can create political pressure to change the project. For example, after each election of a new deputy from the province ideas about the management of Maaspark changed, which hindered the creation of a management agreement (*interview Dijkgraaf*). However, the group of government officials was quite constant. For example, for both municipalities the same government official was involved during plan development and implementation (*interview Venray*, *interview Horst aan de Maas*). Because people were involved the entire project, knowledge on earlier discussions and decisions was easier accessible. This contributed to the creation of trustful relations with the inhabitants.

Besides the various platforms for participation that were organized by the projectbureau, inhabitants could have an influence on decision-making via more formal ways like filing a formal complaint about the provincial zoning plan. These more formal ways to influence decision-making require knowledge and are not always easily accessible for citizens (*interview Horst aan de Maas*). A provincial zoning plan (*Provinciaal Inpassings Plan*, PIP) was developed to have a legal basis for the project. These provincial zoning plans require a high level of detail whereas to foster innovation an open tender is necessary (personal communication stakeholder relation officer via email 25-01-2022). Inhabitants were involved in the creation of the PIP to create support for the project and prevent procedures in court. When negotiations with the owner of camping Kasteel Ooijen were complex, the stuurgroep decided to exclude the camping from the PIP. This enabled the approval of the by the provincial council (*interview Horst aan de Maas*). The approval of the PIP is required to start implementation of the project. However, the owner of the camping was not informed about this and during the filming of a documentary about Ooijen-Wanssum he was confronted with his exclusion from the PIP (*interview owner Camping*). This created friction between the government authorities and the camping owner. At the end it was decided that the municipality of Horst aan de Maas would create a zoning plan together with the camping owner. At the end of project provided an opportunity for him to realize his dream of a terrace camping (MiniKoerier, 2020). “Looking back, it is the best thing that could have happened. The municipality is deeper connected to the area than the projectbureau in Ooijen-Wanssum” (*interview camping owner*). It shows that participation processes and co-creation also provide new opportunities. These opportunities unfold during the plan development phase and are not clear from the beginning onwards.

7.2.4 Participation

Willingness and ability to participate

Participation in co-creation processes is voluntary and not all stakeholders want to be part of the process. This willingness to participate depends on personal characteristics like interest in the topic and issues at stake and circumstances such as individuals' expertise and time (Rădulescu *et al*, 2020; Teder, 2018). In these co-creation processes, there are different levels of engagement. Participation processes involve a range of possible ways to collaborate and for participation to evolve (Teder, 2018). After work people do not always have the time and energy to visit a village council meeting (*interview local musician*, 19-10-2021²⁸). Others were not able to participate because of sickness or other personal

²⁸ Hereafter interview local musician

circumstances (*interview teacher, interview bird watcher, 24-11-2021*²⁹). Another inhabitant did not want to engage with the project since he felt he did not have any interest in the project (informal conversation retiree, 09-11-2021). People who were not directly involved in the process were updated via their neighbors and social media (informal conversation women from Broekhuizenvorst, 06-10-2021).

For inhabitants it was not easy to realize the impacts of the project since expert knowledge is required to understand technical drawings and impact of the project (*interview MooderMaas*). These structural differences can limit participation. One of the interviewees said: “You think that it would be good, things will only get better, but when it is finished, you see the project and maybe it is not as beautiful” (*interview local musician*). During the construction phase he realized that the road to Geijsteren would be closed down. With several people they tried to prevent the closing down of the road through the forest and they considered a signature campaign. They had several meetings with the projectbureau. However, because the provincial zoning plan was already approved, it could not be changed. Only when the fences were places, people realized the impact of the project. Some people in Wanssum demolished the fences. At the end the construction company decided to place some three trunks in front of the fence to prevent people from demolishing the fence (*interview local musician*).

Different actors have different kinds of knowledge, resources and ideas about the project and how it should produce public value (Rădulescu *et al*, 2020). A dairy farmer from Broekhuizenvorst felt that the experiences of people from the area were not always incorporated in the plan. “The issue is, behind the desk it is different than in reality. They assume things because they studied. Talking with people who are already living there is the most important thing, we know the area” (*interview dairy farmer Broekhuizenvorst*). She felt that the options she proposed were not seriously considered since it never became clear for her why these ideas could not be implemented. Because of this she is less satisfied with the project (*interview dairy farmer Broekhuizenvorst*). It shows that knowledge is a contested field and that the production and use of knowledge is related to possible solutions to the water safety problem (Roth *et al*, 2021). This difference in knowledge created friction between inhabitants and the project. These conflicting knowledge claims may influence participation processes since some knowledge is considered to be more legitimate by the management board of the project (Roth *et al*, 2021).

Participatory processes intersect with structural conditions and focusing on individuals can result in neglecting these power differences. For successful participation both strengthening citizens’ voices and improving responsiveness of institutions is needed (Morales & Harris, 2014). The unequal power relation in Ooijen-Wanssum was also mentioned in an interview. “If I didn’t have access to the deputy, didn’t speak the language of the government and hadn’t been able to approach the right people on the right time, together with my advisors, I don’t think I could have managed” (*interview owner camping, 07-12-2021*). In Ooijen-Wanssum some people started their protests only after the floodings of July 2021. “We visited several meetings and we asked if we could expect water in our house. We asked multiple people and every time they told us: Don’t worry, the water will not pass the road and will not reach you. However, in July it did” (*interview inhabitants Broekhuizenvorst, 24-11-2021*). “The projectbureau created a beautiful story for the people and people become part this story and think that it would become something beautiful (...) when I saw how things would be, it was impossible to change. They invite you but the plan is fixed” (*interview local musician*). These examples also show that it is extremely difficult to realize participation in

²⁹ Hereafter interview bird watcher

practice. Although the stakeholder relation officer tried to understand people and their concerns, some people felt that because of structural differences they were not able to participate (*interview stakeholder relation officer*, interview horticulturist Broekhuizenvorst, 26-10-2021³⁰).

Resistance

According to the stakeholder relation officer resistance in the area was relatively low. "There are always people who lose something. They have been critical. However, the protest was always on a small scale and never really affected the project. There always has been a bigger group who thought it was the right solution. In that case it is also just simply public interest vs. individual interest. I think the resistance was low because everyone has been able to participate and acknowledges that their input has been used" (*interview stakeholder relation officer*). Another reason for this is that the project would give a boost to the area and provided opportunities for growth of businesses and because of these opportunities people decided to collaborate (interview project leader municipality of Venray, 25-11-2021³¹). Despite of support for the project, some individuals were heavily impacted by the project: "Some people lived in the area for 40 years and they are rooted there. For some moving out was very difficult" (*interview displaced inhabitant*).

There are various examples of resistance. In Blitterswijck people tried to save an old monastery wall. They filed a petition against the demolishment of the wall (Cuijpers, 2020). However, because the people have been consulted about the wall in 2014 and they agreed that part would be demolished the request to keep a bigger part of the wall was declined (POW, 2020). In Wanssum the foundations Monumentaal Venray (*Monumental Venray*) and Heemkundevereniging Meerlo-Wanssum (*Local history Meerlo-Wanssum*) tried to save the former city hall in Wanssum. At the end it was decided to keep the tower of the city hall as an artwork in Maaspark (*interview local musician*; Peel&Maas, 2014). A local musician wrote several songs about the project and how it changed the area. For him these songs are a way to reflect on what happens and how it affects the area. "In two years, it looks totally different here. Music and art are landmarks of the era." (*interview local musician*). He wrote his songs about the road to Geijsteren, which is no longer accessible as a way to protest to this decision and to express his feelings about the closure of the road. These songs offer a different perspective on the project by showing the lived experiences of people in the area and provide a tool for resistance.

Land acquisition

To be able to implement the project land was needed. Farmers in the area felt forced to sell their lands because if they did not sell the government would expropriate them. One of them said: "The land is the life of your business, and they can take it from you that easily" (interview dairy farmer Wanssum, 18-09-2021³²). For several farmers in the area this process has been very frustrating and stressful. Especially because the process took several years. For a dairy farmer from Wanssum the process of selling 40 hectares to the project bureau only finished in 2021, whereas the actual project already ended a year before. In the beginning he was told that he had to move and therefore he decided not to invest in his farm anymore. "The first five years nothing happened, they only came to talk every once in a while. When they had the money, they suddenly had to decide quickly" (*interview dairy farmer Wanssum*). From project initiation until implementation takes quite some time. It shows that participation can be difficult and that these processes are slow and require sustained engagement over time. Also their opinion on whether to sell the property is not

³⁰ Hereafter interview horticulturist Broekhuizenvorst

³¹ Hereafter interview Venray

³² Hereafter interview dairy farmer Wanssum

constant over time but changes. For example, some farmers did not want to sell first but when they realized that they did not have a successor, they wanted to sell their property and others decided to stop farming because of personal circumstances (*interview LLTB*).

The farmers were compensated for their land but felt that they were not offered a fair price. A dairy farmer from Wanssum: "They are talking about common interest and water safety but at the end they need your property. But they offer you a price for which you cannot buy anything back. That is why it took so long. For me it was difficult. They have money for everything, but the people they need do not get a fair price." Because of this he rejected the first offer. He also felt that his relationship with people from the village changed after the project. "Many people think we benefited, because we sold a lot of land, but it actually has cost money. People are talking about you behind your back, it's annoying." (*interview dairy farmer Wanssum*). Another farmer said: "There are discussions with people from the village. They say: it has become such a beautiful area. For us it is more difficult. We lost land and now the geese damage the grassland" (*interview dairy farmer Broekhuizen*). The project changed relationships within the rural communities in the area. It created frictions between farmers and people living in the villages. At the same time, the project did not have the same impact on all farmers, for some it provided an opportunity to sell their land whereas others lost valuable land (*interview LLTB*). Depending on individual circumstances different people are affected differently by the project.

The selling of their property can be very emotional. A horticulturist from Blitterswijk said: 'Especially for my father it has been very stressful. I care less about the property. The property has been owned by the family since the 1800s. They (*POW*) say: they are small pieces. However, the emotional value of it cannot be compensated and the project bureau does not understand how people can be attached to it'. According to the project leader of the municipality of Horst aan de Maas, these conflicts about space are a conflict between common and individual interest. "When the common interest is that big, the individual interest is always less important. You have to talk a lot with these people, it takes time before they feel that way. It sometimes takes months or years but at the end when you talk a lot with them, people will realize it. (...) You (*as a government*) have to focus on the common interest and to convince people that selling their property is the better option" (*interview Horst aan de Maas*). There is a focus on 'rational' decision-making and convincing inhabitants to make a rational decision based on water safety principles, which forgets the impact that the selling of property can have to people who are attached to it (cf. Mitchell & Ejderyan, 2020).

7.3 Construction phase 2016-2020

After the first part of the tender process three construction companies were selected to develop more detailed designs. During the tender phase the construction companies had several meetings with the project bureau to discuss their plans (*interview MooderMaas*). In these meetings representatives of the village councils were involved (*interview village council*). In 2016 the construction company submitted their offers. After this the project was granted to MooderMaas, a combination of Dura Vermeer and Ploegam. In collaboration with a landscape architect and local inhabitants they made the final designs and applied for permits (*interview MooderMaas*). In 2017 construction started. In 2020 Maaspark Ooijen-Wanssum was officially opened.

7.3.1 Platforms for participation

In this phase the construction company and the landscape architect became involved, which changed the dynamics in the participation project. New platforms for participation, like the design workshops emerge whereas other platforms for participation like the interest groups disappeared. Meetings with the village council continued, but in a different way since the

construction company would participate in these meetings. These different platforms for participation opened-up new possibilities for co-creation and participation.

Design workshops

The construction company organized several design workshops in which inhabitants could give their view on the designs. For example, they could give their opinion on the design of the bridge in Wanssum. It provided an opportunity for inhabitants to ask questions about the design and to express their interests. These design workshops were initiated by the construction company and the landscape architect (*interview construction company*). The first design workshop was public. During this meeting a few representatives were chosen to participate in follow-up design workshops (POW, 2016). The construction company organized separate workshops for each sub-area of the project. The stakeholder relation officer of the construction company also talked with individual stakeholders to make the final designs. These workshops provided opportunities for some of the stakeholders. It opened up the possibility for the owner of camping Kasteel Ooijen to realize a terrace camping. Soil that originally would have to be moved out of the area was used to create these terraces (*interview camping owner*).

The boundaries for participation are defined in the contract between the construction company and the projectbureau. In the design workshops there was space to optimize the plan within these boundaries (*interview landscape architect*). The construction company recognized the importance of participatory design. However, “this is inherent to tension, the people can want a lot, but we cannot do all. We have a certain assignment so if people say, I actually do not want a bridge, I understand, but that is just not possible” (*interview MooderMaas*). Setting boundaries and clear communication on what to expect and where inhabitants can decide on is necessary (*interview D. Roth*). According to the architect this involves being open about your assignment as an architect, show them your starting points and take them along and show them the space for alternatives you see (*interview architect*). In his opinion this is important because “when you ask an open question, some people might say I do not want any change, just put the levee somewhere else. However, that is not where it is about, the trajectory of the levee is fixed” (*interview architect*). For the construction company setting these boundaries was not easy. “In the first phase we often said, lets include this, lets listen to this. However, at a certain point we realized we had to say until here because we cannot solve all problems” (*interview MooderMaas*).

The construction company was aware of this unequal knowledge position: “Citizens don’t see anything in a technical drawing. You cannot ask that from them” (*interview MooderMaas*). The construction company tried to bridge this knowledge gap by visualizing technical drawings and explaining the designs during village council meetings and inviting citizens for the design workshops (*interview MooderMaas*). During these design workshops the architect has a crucial role. “For people it is quite difficult to imagine how something would be what is not there yet. It is the task of the architect to show them what it could look like” (*interview architect*). However, some of the citizens felt they were disadvantaged and did not have the capacity to critically review the designs. “They show beautiful pictures during the meetings but if you ask questions they say: it is not part of the scope of the project. Yes, but you did show it on the pictures. I learned to question the pictures, what are they really going to do and what is just nicely drawn?” (*interview village council*).

However, this dichotomy between expert knowledge and citizens needs to be nuanced (Roth *et al.*, 2021). Expert knowledge is also highly diverse and could create conflicts between experts on different knowledge claims. For example, in Ooijen-Wanssum there were discussions between the construction company and the landscape architect on what to include in these drawings and design workshops. For the design manager of MooderMaas it

was not that easy in the beginning. “I saw somethings on the map of which I thought, should it be included already?” (*interview MooderMaas*). Vice versa the designs of the architect depended on input from the technical design team of the construction company, which made the technical drawings and calculations for the implementation of the design (POW, 2017A). In some cases, the ideas of the architect could not be implemented because of technical or monetary limitations (*interview MooderMaas*). In other cases, the involved governments did not agree with the designs presented to citizens. This created tension between the projectbureau and the construction company. Because of this, the construction company decided to discuss what would be presented during meetings and design workshops with citizens with the projectbureau beforehand (*interview MooderMaas*). These examples show that expert knowledge is political and produced, contested and negotiated in a particular context in which different experts try to legitimize their knowledge claim (Roth *et al.*, 2021).

7.3.2 Collaborative networks

In this phase new networks emerged. Diverse networks of stakeholders can contribute to more innovative solutions when values are aligned and conflicts are alleviated (Rădulescu *et al.*, 2020). The construction company MooderMaas is a network of two construction companies, who closely collaborated with HNS landscape architects. Also, a network between the projectbureau and MooderMaas and MooderMaas and inhabitants of the area was established. These networks led to new conflicts in Ooijen-Wanssum but also opened up possibilities for innovation.

MooderMaas

The participation process partly depends on the history of relations among stakeholders (Rădulescu *et al.*, 2020). This is not only the case for citizens and the government, but also for the construction company. The collaboration of DuraVermeer, Ploegam and HNS landscape architects has been established during earlier water management projects. The construction companies have several reasons to do so. Firstly, they have different specializations. DuraVermeer is a construction company which is specialized in infrastructure, whereas Ploegam has more experience with building dykes. Besides this, risks are divided between the two companies. According to the construction company these partnerships have a corporate side and provide opportunities for innovation and the creation for win-win solutions (*MooderMaas*). For each project the two companies establish a new company together, in this case MooderMaas.

MooderMaas and the projectbureau

The unfinished buying of the land created planning difficulties for the construction company. In some cases construction already started before the land was bought (*interview dairy farmer Wanssum*). In the beginning MooderMaas and the projectbureau independently met with inhabitants and formed two separate networks. The projectbureau was responsible for buying the land, whereas MooderMaas would discuss the final designs with stakeholders. However, for people these things were related and during negotiations with the government about the land they would ask questions about the final designs and when they were talking with the construction company they wanted more information on the price of the land and compensation (*interview MooderMaas*). This led to discussions between the government and the construction company because for example, the government would do concessions to the design, which did not cost them any extra money but for the construction company this was not feasible. They solved the problem by deciding to do the negotiations together and a new network between the private sector and the government was created. Because the projectbureau and the construction company have different interests, doing these negotiations together was not an easy task (*interview MooderMaas*). This example shows

that interdisciplinary networks can create new conflicts between stakeholders and that the formation of these networks requires open communication.

The contract between the construction company and the projectbureau and the PIP set the boundaries for the design (*interview architect*). Setting boundaries is crucial but it can also limit space for innovation. In the case of the bridge in the center of Wanssum the construction company realized that the design could be improved. Nevertheless, changing this design was not easy since it had been formalized in the PIP and changing this requires a change of the PIP. The construction company was able to convince the projectbureau that the new design would be better. However, because it involved a revision of the PIP, the involved governments had to be convinced too. This was quite difficult because the municipality wanted to know the opinion of inhabitants before they would approve the new design but at the same time did not allow the construction company to talk about this topic with the inhabitants (*interview MooderMaas*). This created some friction: “We wanted and had to continue because of time, permits and preparation. We wanted to implement it to improve the project but we had to involve the community in small steps with the right frequency to create the same support base” (*interview MooderMaas*). This example shows that for co-creation processes bridging the gap between different stakeholders is crucial to be able to implement innovative solutions. However, bridging these gaps creates tensions (Rădulescu *et al.*, 2020). In Ooijen-Wanssum the construction company realized that bridging the gap between the government, inhabitants and the construction company was crucial to be able to implement the improved design. “We tried to say: These questions, I personally think they are not needed but they are there and we have to find a way to answer them to be able to implement what we wanted” (*interview MooderMaas*). In 2017 the revised PIP was formalized and the new design of the bridge in Wanssum was implemented (POW, 2017B).

MooderMaas and Ooijen-Wanssum

For some, such as the camping owner, it felt like a relief to work together with the construction company, since for him talking with fellow entrepreneurs felt much easier and opened up the possibility for creating his dream of a terrace camping (*interview camping owner*). The village council in Broekhuizenworst is more critical about the role of the construction company. “One has to be careful, since there is a difference between pictures and words and what has been implemented” (*interview village council*). According to the village council the municipality should have monitored the work of the construction company more closely. The village council is not satisfied with the final design of the harbor in Broekhuizenworst. These examples show that depending on the outcomes people have different opinions on the role of the construction company and the co-creation process and that within the project co-creation processes have different outcomes for different stakeholders.

7.3.3 Decision-making

The construction company introduced a new way of internal decision-making in Ooijen-Wanssum. Because the project focused on integrated decision-making the construction company decided to implement this in their internal decision-making process. This decision was also based on experiences in previous projects after which they realized that internal discussions on design choices enabled them to communicate more clearly why certain decisions were made (*interview MooderMaas*). Decisions were taken in a team in which different disciplines were represented (e.g. design, implementation, environment, process, contract). For the construction company this way of working together has been an eye-opener since before they mainly focused on results and did not take time to discuss the interests of different stakeholders and think in a strategic way about the design choices

(*interview MooderMaas*). The introduction of these decision teams is an example of internal co-creation. It shows that co-creation can take place at different scales within the project.

Besides these personal characteristics and personal vision on participation and preferred solution, the availability of money for participatory processes and co-creation is an important vector that shapes participation (Rădulescu *et al.*, 2020). In the case of Ooijen-Wanssum the construction company was able to save a lot of money by using the soil from the area for construction. This opened up the possibility to involve citizens in the design process (*interview architect*). Besides this, there was no financial pressure to design in a way that would reduce the costs of the project. This opened up the possibility to improve the design (*interview MooderMaas*).

7.3.4 Participation

Stakeholder characteristics

Also in the implementation phase personal characteristics of stakeholders have been an important vector that shaped the participation process. It matters who is working on the project. According to the design manager of MooderMaas there has been a good connection from the start and the right people were working on the project, which created a positive working environment in which people strengthened each other's qualities (*interview MooderMaas*).

The way decisions about the design are made has an influence on participation (*interview MooderMaas*). In the case of Ooijen-Wanssum the construction company worked closely together with the projectbureau and decisions were taken together. The collaboration between the various stakeholders before the implementation phase contributed to this focus on the overarching goal of the project instead of the various subprojects. "In this project our mantra has been your problem is mine problem, is our problem (...). It might sound easy but it has not been easy" (*interview MooderMaas*). Implementing this in practice can be complex and can create tensions between different stakeholders. For example, for MooderMaas the planning phase took longer than expected because they underestimated the impact of other stakeholders on their decisions and the time it would take to finish the design and start construction. Nevertheless, both the project bureau and the construction company were able to continue this way of working together during the entire project. This required commitment and flexibility of both actors (*interview MooderMaas*).

Another vector that opened up the possibility to work according to this motto has been the integrated project budget. Because of this the advantages and disadvantages of certain design decision were evaluated at project level. This opened up the possibility to implement solutions that were more expensive when money was saved in another subproject. According to MooderMaas the focus is often on these subprojects. Dividing the financial advantages and disadvantages for each of these subprojects can result in neglecting the impact of certain decisions on the project as a whole (*interview MooderMaas*). It shows that it matters how the scope of the project is defined and how the various subprojects are related to each other. In the case of Ooijen-Wanssum the way the construction company and the projectbureau worked together allowed for flexibility and created space for innovation (*interview MooderMaas*). This way of working together has been defined before the implementation phase. During the tender phase the projectbureau clearly defined how the collaboration between the construction company and the projectbureau would look like in the implementation contract. However, how to work together cannot be fully described beforehand. During the project MooderMaas realized that the construction company and the projectbureau could not operate as two separate organizations. Beforehand the construction company thought that the buying of the land was the responsibility of the projectbureau.

However, it affected the company since the acquisition of land was not finished when construction was started. This realization contributed towards a positive attitude towards joint decision-making.

7.4 Conclusion

This research shows that participation and co-creation are diverse and dynamic processes. In each phase different networks of stakeholders were formed, which creates both new opportunities and conflicts. For instance, when the construction company got involved the dynamics changed. It opened up opportunities for some actors to change the design and create a terrace camping. Depending on the phase of the project different platforms for participation were available to different actors. During the preparation phase participation was organized on an individual level and only invited stakeholders could participate in “kitchen table conversations” and the symposium. In this phase Habiforum had a crucial role in organizing participation. Their view on participation and co-creation shaped how participation took place in Ooijen-Wanssum. This shows that it matters who decides how participation is organized. In the plan development and implementation phase stakeholders who were not directly affected got involved via the village councils, design workshops and other platforms for participation. Participation was organized by the projectbureau. This research also shows that co-creation and participation is complex and requires sustained participation over time. However, not all people want to participate in co-creation processes and different people participate differently.

During the different phases of the project various people felt excluded from participation or felt they were not being heard. Several stakeholders mentioned that lack of knowledge and access to information limited the possibilities for participation. It shows that simply creating platforms for participation is not enough and that participation processes also involve strengthening of citizens voice by making information accessible and efforts to overcome power differences. Open communication and defining clear boundaries for participation have been identified by several actors as having a positive impact on participation and co-creation.

Also involvement of inhabitants in decision-making changed during the project. During the initiation phase inhabitants of the area were involved in the decision-making process for the preferred strategy. In the plan development phase decisions were made by the management board but inhabitants had the opportunity to react to this via the village councils and interest groups. Gradually inhabitants became less involved in decision-making. For Ooijen-Wanssum the integrated project budget and related project organization had a major impact on decision-making. It shows that the way in which interactions between different stakeholders are structured has a considerable influence on participation and decision-making.

8. Ooijen-Wanssum as *the way forward*?

It is claimed that co-creation results in added public value and creates innovative solutions to deal with complex planning challenges (van Buuren *et al.*, 2019). In this chapter I will analyze if and how co-creation led to a more innovative design in the case of Ooijen-Wanssum by answering the fourth research question: *How did the co-creation processes influence knowledge, project design and implementation and with which impacts?* First, I will investigate how co-creation influenced knowledge production and how this resulted in new and innovative ways of project design and implementation. Secondly, I will look into the impact of the project. I will investigate how this claimed impact differs from on-the-ground existing realities. I will focus on the maintenance and management of Maaspark and the impact of the floodings in July 2021 in the area. See figure 7 below for a graphical summary of this chapter.



Figure 6 Graphical overview Management and Maintenance

8.1 Knowledge, project design and implementation

Co-creation processes are collaborative process in which different types of knowledge come together with the intention to create something that is not known in advance (Medema *et al.*, 2017; Rădulescu *et al.*, 2020). In Ooijen-Wanssum the project team tried to take the local landscape as a starting point for the project design. They aimed to combine local knowledge about the area and expert knowledge on water management. This resulted in new ways of knowledge production, project design and implementation (*interview investigator Habiforum*). “We tried to think about when taking water safety measures, what does this place need? How does the river function in this area?” (*interview stakeholder relation officer*). The project has been initiated by the region and two actors from the area (stakeholder relation officer and deputy of Province) had a major influence on what participation looked like (personal communication stakeholder relation officer via email, 25-01-2022). Relevant local stakeholders have been involved from the beginning and several customized solutions were implemented. Although possible solutions and its consequences have been developed in collaboration with the area, the investigators of Habiforum had some initial ideas about the direction of the project and the idea of creating New Rivers was quite popular at the time (*interview Stroming; interview investigator Habiforum*). However, some inhabitants, like a dairy farmer from Broekhuizenorst, felt their knowledge about the area was neglected (*interview dairy farmer Broekhuizenorst*). This highlights that the impacts of co-creation on knowledge, project designs and implementation are contested. The project fundamentally changed the area, from high-intense farming to nature without a lot of resistance, which is quite remarkable (Daalder *et al.*, 2021). According to the stakeholder relation officer the participation process contributed to this relatively low level of resistance (*interview stakeholder relation officer*).

In Ooijen-Wanssum the involved governments crossed organizational boundaries and jurisdictions by creating an area redevelopment in which various projects were combined and a new organization (*the projectbureau*) was established (*interview MooderMaas*). This enabled the creation of a coherent and integral plan. Decisions were made within the projectbureau and were made considering the following: the water determines, the landscape leads and the nature and economy profit (personal communication stakeholder relation officer via email, 25-01-2022). However, the integrality of the project is debated. According to the LLTB nature and agriculture have become more separated through the project (*interview LLTB*).

8.1.1 Innovation

Innovation is often considered as a ‘magical concept’ (Voorberg *et al.*, 2015). However, the impact of innovation is diverse and not necessarily positive. The project in Ooijen-Wanssum fundamentally changed relationships in the area and created friction between farmers and inhabitants from the villages. For the farmers the Maaspark symbolizes land they lost, for inhabitants of the area it is a place for recreation and enjoying nature (*interview dairy farmer Wanssum; interview dairy farmer Broekhuizenorst; various informal conversations in Maaspark Ooijen-Wanssum, October & November 2021*). One of the farmers felt that farming is increasingly seen as something negative (*interview dairy farmer Broekhuizenorst*). For some of the farmers the project created a lot of stress. One of the farmers got the impression that the projectbureau wanted them to leave the area (*interview dairy farmer Broekhuizenorst*). It shows that the impacts of innovation are highly diverse and conceptualizing innovation as something positive is too simplistic.

Building trustful relations with the construction company and an open design process created the possibility to implement a new type of dyke design. During the tender phase a dialogue between the projectbureau and the construction companies in which possibilities to integrate

the design in the existing terrace landscape in Limburg and to connect different parts of the design was created. MooderMaas developed the idea of steep edge dykes and high soil dykes, which led to less loss of agricultural land and opened up the possibility of using soil from the area, which saved money (*interview architect*). Traditionally the landscape in Limburg has no dykes, but there are natural terraces and slopes. These landscape elements formed the basis for the dyke design. It contributed to local acceptance of the project since it enabled several farmers to continue using the land for agriculture and reduced resistance to introducing dykes into the area (*interview dairy farmer Wanssum; interview architect*). Since there were no standard for this type of dyke, the construction company did several experiments to test it. In the beginning the waterboard was hesitant because the design differed from the standard. However, after several dialogues and experiments the waterboard was convinced (*interview MooderMaas*). The implementation of this type of dyke fits within the call for more nature-based solutions in which engineering and the ecosystem are integrated in designing water safety projects (Kumar *et al.*, 2020).

8.2 Project Impacts

Various actors consider Ooijen-Wanssum as success. According to dijkgraaf Ooijen-Wanssum is a success project, which shows us how things should go. It created many opportunities for both economic and nature development. Ooijen-Wanssum is an example of an innovative and participatory project (Nationaal DeltaCongres, 11-11-2021). It is seen as a win-win solution in which the five involved governments successfully collaborated. According to the project leader of the municipality of Horst aan de Maas the project has been successful because everybody wanted it to be a success and focusses on the results of the total area development. The project director summarized the success of Ooijen-Wanssum as follows: “We managed well, we had realistic goals, good quality of people and a bit of luck” (*interview project director*).

The project in Ooijen-Wanssum was also rewarded with several national and international prices. In 2021 Ooijen-Wanssum was rewarded with the Landezine International Landscape Award, the Water innovation price in 2019 and in 2018 Kwaliteitspluim (*spatial quality price*) of the department of I&W (POW, n.d. D). According to the project director these prices show that the project was a success (*interview project director*). The project was also finished within time and budget, which is quite unusual for these large projects (*interview project director*). However, this success is also context related according to the project director. “We also were lucky, that the market did not collapse for example. It is an external factor you cannot influence (...). We also had good weather and we could continue digging up to December” (*interview project director*). This implies that what worked for Ooijen-Wanssum does not necessarily work in another area. This was illustrated by the waterboard: “Now we just talk about the success and it cannot be better than this, if everybody does like in Ooijen-Wanssum, we will be fine. However, I tried to implement it in another project and there it failed” (*interview waterboard*).

However, not all people consider Ooijen-Wanssum as a success. According to a dairy farmer in the area: “It was a win-win solution for them (*the projectbureau*), not for us. We used to reclaim agricultural land from nature and now we were supposed to do the opposite. That is difficult” (*interview dairy farmer Broekhuizenvorst*). Scale also plays a role in this. This was emphasized by an inhabitant who moved out: “It is a success, I do think that it is more or less true. However, with the footnote that some individuals are victims” (*interview moved-out inhabitant*). A project is seen as successful and these stories the suffering of the involved actors are largely ignored (*interview D. Roth*). This was also emphasized by a horticulturist from Broekhuizenvorst. “Everyone says, it worked perfectly (*after floodings July 2021*), yes for 99,9%. It doesn’t have to be seen as a mistake, but it is a negative effect that we and

maybe nobody expected" (*interview horticulturist Broekhuizen*). These examples show that there is a tendency to focus on what worked well and neglect negative impacts of this project. It highlights that the impact of these projects is ambiguous and evaluating these projects simply in terms of success or failure is too simplistic. However, acknowledging the diverse impacts among different stakeholders is not easy. There is a large pressure in the Dutch water sector to present these projects as a success since these projects are very expensive and the reputation of the Dutch water sector should be defended (*interview J. Warner*).

8.3 Management and maintenance

The construction of Maaspark Ooijen-Wanssum finished in December 2020 and Maaspark was officially opened in June 2021. The projectbureau was disbanded from July 2021 onwards (POW, 2021). The project formally ended, however new discussions on the management of Maaspark Ooijen-Wanssum and the role of the project and the projectbureau during the floodings of July 2021 emerged.



Figure 7 Maaspark Ooijen-Wanssum

source: author & <https://www.ooijen-wanssum.nl/beeld/fotos/>

8.3.1 Management of Maaspark

Ooijen-Wanssum contributes to the provincial goal of construction 2,600 ha of nature before 2027 (Daalder *et al.*, 2021). In Maaspark Ooijen-Wanssum management is crucial because otherwise the area will develop into a willow forest, which has a negative impact on water safety (Daalder *et al.*, 2021). Some have argued that although the floods in the summer of 2021 did not cause major problems in Ooijen-Wanssum, this seems more despite than due to the management of the province (Daalder *et al.*, 2021). The management is not considered as part of the project. Personal opinions on whether to include managers in the design phase contributed to the management and maintenance problems after the formal finishing of the project. According to stakeholder relation officer actors responsible for management and maintenance should not be part of the project: "The nature of a project is you built it and after that it is just different governments being responsible for the daily management. The project builds, the manager manage" (*interview stakeholder relation*

officer). It would lead to less special and innovative designs since they would focus on making a design that is easy to manage and maintain (*interview stakeholder relation officer*).

However, according to the landscape architect management and maintenance is a crucial part of the design process. In his opinion the managers should be part of the project to be able to incorporate the ideas of the managers in the design. Nevertheless, the managers were not involved in the project, which created a major problem when the project was finished since no manager was appointed (*interview architect*). He considers bureaucratic processes as a major cause of this lack of management and maintenance since management and maintenance cannot be tendered before the finishing of a project (*interview architect*). It shows that processes during the project have an impact on management and maintenance. Therefore, the management and maintenance of a project should be included when evaluating the impact of co-creation and participation. This was also emphasized by an employee of Staatsbosbeheer. "It is kind of a phantom situation now. The consortium falls apart. Who is responsible for the management is not considered. It is seen as a closing piece. We will build and furnish the area and management is not sexy but actually you are executing a project for a situation in management and maintenance. You are not finished when the management and maintenance phase starts, it just begins. (..) The discussions around management are silenced, they focus on the success of the project" (*interview Staatsbosbeheer*). However, according to the former project director there are no issues with management. He also makes a clear distinction between the province and the project. "The Maaspark is nature and nature is per definition the responsibility of the province. It is just arranged like that, it is not that complicated. The province signed the management agreement so they are responsible. There are no discussions. (..) Before the tender process we had to remove the cattle from the area. We saw that the province would not make it on time and advised to leave the cattle in the area. However, it is up to the province to make choices and they did so" (*interview project director*). This example emphasizes that it matters what is included or excluded when investigating the impact of co-creation in Ooijen-Wanssum.

After the closure of the projectbureau the province became responsible for the management of the Maaspark. During the project the various governments have signed the final management statement to arrange the management of the project area. It was decided that the area should be managed by one manager and that cattle should be a crucial part of the management. The management plan was developed by MoederMaas and includes guidelines on water safety, erosion control and recreation. However, no manager was appointed. Therefore, after the formal ending of the project the area was not managed.

Several nature-loving inhabitants are worried about the management of Maaspark Ooijen-Wanssum. "It is a big frustration for me (..), last September they took out the cattle and that's where it stopped. In March this year (2021), after the mowing season they flail-mowed (*klepelen* in Dutch) the area. Later they mowed when it was too wet. If you walk along a ditch and you see hundreds of fish being either half dead or dead, well that's not very pretty. The province is not doing anything to fix the management quickly. I emailed and called them several times but they never responded. When the new provincial government does not do anything, we (*nature-lovers from the area*³³) are planning to tell this story in the media" (*interview bird watcher*). Inhabitants of the area report having difficulties in complaining about the lack of management. "The province mowed outside the mowing season. Farmers would get high fines for this because mowing in the breeding season is not allowed. (..) Young hares and birds were mowed to death. We complained about it but never heard anything

³³ We as described by interviewee in follow-up question

about it because it is the province that is marking their own work” (*interview inhabitants Blitterswijk*). The issues around mowing were exacerbated by tendering the project to a company which has no experience with managing nature since they focus on maintenance of roads (Daalder *et al.*, 2021). The province asked Staatsbosbeheer for maintenance and management, but because of European tender rules, they had to reject this request since they wanted to participate in the tender process (*interview Staatsbosbeheer*). The lack of forest rangers and control of the area created the opportunity to use the nature park for motocross racing and parties (informal conversation women from Broekhuizenenvorst, 06-10-2021; Daalder *et al.*, 2021).

Changing dynamics between stakeholders

The problems around management and maintenance of Ooijen-Wanssum also highlight some dynamics in co-creation processes. It shows that the dynamics within networks of stakeholders can rapidly change when the context changes. Part of the people working on the management and maintenance also have been involved during the project (*interview Horst aan de Maas*). When the shared purpose of finishing the project and the related project structure was no longer there, the network of the different governmental stakeholders felt apart. The management and maintenance is fragmented since each of the different governments is responsible for the management of a different part of the project (e.g. the municipalities manage municipal roads and biking paths, the water board is responsible for maintenance of the levees, etc.). The issues around management emphasize the importance of platforms for participation and co-creation. When these platforms like the board of managers of the project and the structure of the project bureau disappeared, the co-creation process radically changed. This was also emphasized by MooderMaas “Co-creation is not just about collaborating. It is about moving beyond your own ‘tube’. In this project people were able to do so, but when they are talking about management and maintenance their modus completely changed. They have been collaborating for over 10 years, the basis (*the project*) disappears and they are all back in their own ‘tube’” (*interview MooderMaas*). It also shows that successful collaboration in the past does not imply that in another context the same actors would engage in co-creation processes.

After the finishing of the project the different governments disagreed on who should be responsible for the management. The province, Staatsbosbeheer and Rijkswaterstaat own land in the project area and have different management strategies (*interview Dijkgraaf; interview Rijkswaterstaat*). For Staatsbosbeheer improving biodiversity is important, whereas Rijkswaterstaat is focused on water management. Because Ooijen-Wanssum is a spatial project to reduce the impact of floods, it is part of the water law permit. This means that Rijkswaterstaat created a vegetation layer in which they use models to describe the maximal roughness of the area and allowed vegetation types. This limits the possibilities for Staatsbosbeheer to give space to internal processes and creates discussions between different organizations (*interview Staatsbosbeheer; interview Rijkswaterstaat*). There also have been discussion with the municipalities of Horst aan de Maas and Venray, who wanted to be responsible for the management (*interview Venray*). However, the municipal councils did not agree with this and it was decided that the project should be tendered to a nature conservation organization (*interview Staatsbosbeheer*). These discussion on who should be responsible for the management slowed down the process of tendering the management of Maaspark and prolonged the management issues.

Internal issues and changing context for nature conservation

Also dynamics within organization contributed to the lack of management after the project. Within the province of Limburg several integrity issues resulted in various changes of the provincial government. In 2021 three different people have been responsible for nature

conservation (van Hoof, 2021; interview Dijkgraaf). Each deputy had his own opinion on how management in Ooijen-Wanssum should be arranged. Some wanted local farmers to be responsible for the management whereas others wanted it to tender to a nature conservation organization like Staatsbosbeheer. These conflicting visions made it more complex to arrange the management (*interview Dijkgraaf*).

The issues around nature conservation in Ooijen-Wanssum are related to issues around the decentralization of nature conservation in the Netherlands and the province of Limburg. In 2011 nature conservation was decentralized and the provinces became responsible for nature conservation. Also budgets were cut by 70% and since the money is not labelled it could easily be used for other purposes by the province (Daalder *et al.*, 2021). Because of this, subsidies for maintenance and management are extremely low. The province of Limburg hardly adds any money to this budget compared to other provinces and in 2018 the province decided to end subsidies for the development of new nature (Daalder *et al.*, 2021). Besides this, in Limburg part of the subsidies for nature conservation were directed to the private companies of a former deputy (van der Steen & Dohmen, 2021). There are no subsidies for the maintenance and management of Ooijen-Wanssum because of these changes in nature conservation in the Netherlands and Limburg. Subsidies for the development of Maaspark have been provided before this change in subsidy provision. The new provincial government decided in 2021 to resume the subsidies on nature conservation and development (Daalder *et al.*, 2021). In March 2022 the area was sold to Staatsbosbeheer. Historically Staatsbosbeheer owned 100 ha of the area (Provincie Limburg, 24-03-2022).

8.4 Floodings July 2021

In July 2021 after heavy rain parts of Limburg were flooded. In Ooijen-Wanssum the floodings were less severe than in 1993 and 1995 due to the project. However, some inhabitants in Broekhuizenvorst did experience more water than before and claim that this is caused by the project. One of them, a horticulturist built an emergency dyke around his fields and moved his plants to higher areas with help of the residents of Blitterswijk. "It was very impressive that all these people came. In '93 and '95 it was for the entire village, now it was just for my business" (*interview horticulturist Broekhuizenvorst; see pictures below*). One of the issues is that his land is classified as agricultural land which is allowed to be flooded. However, the production of his plants is more capital intensive than grass or maize. He feels that the projectbureau did not consider this and that his fields should be classified as business space (*interview horticulturist Broekhuizenvorst*). Various inhabitants claim that they were never informed that the area would be outside the dyke area and the water level in this area would be higher. "They should have informed us. If we should bleed for Venlo, we should be compensated, it should be explained" (*interview horticulturist Broekhuizenvorst*). They developed an alternative plan to solve the issue and are advocating for its implementation. In their opinion a dyke should be built were the Maasarm enters their area.

In the case of Ooijen-Wanssum the project became contested after its implementation and formal ending since discussions on the cause of the floods emerged. Several farmers claim that it was caused by the project. Although all inhabitants claim that the project is related to the floods in July, they have a different opinion on how the project and floods are related. “Things went differently than everybody expected. We expected less water instead of more (..) The opening creates a basin behind our house, the water cannot flow back and is parked here” (*interview horticulturist Broekhuizenvorst*). Another farmer said: ‘Because of the changes in the area we did not know in which direction the water would flow. We build a dyke on the place the water came from in 1993 and 1995 but this time the water came from the other side’ (*interview dairy farmer Broekhuizenvorst*). Another inhabitant claims that because Rijkswaterstaat did not lift the weirs the area was flooded (*interview dairy farmer & excursion leader Broekhuizenvorst*).



Figure 8 Floodings July 2021 Broekhuizenvorst
source: horticulturist Broekhuizenvorst

Inhabitants claim that they were told that there would be less water in the area. “We knew that the water could come here, but our idea was that it would be less water” (*interview horticulturist Broekhuizenvorst*). However, the stakeholder relation officer claims that the project would never lead to a water reduction in the area itself and that people did not understand the impact of living in a flood zone. “I think that they might had something different in mind about what the project would do. There are inhabitants who claim that they are surprised by the high water in the area, while we (*the project team*) always said that there would be a 35 cm water level reduction. That is upstream of the project area. It is visible up to 40 km upstream, but not in this area. The area itself should flow along, that is the entire dilemma. I think that people in one way or the other made up a different story”. The former project director emphasized that everything went as planned: “We calculated beforehand the protection they had before the project and we made sure it was not reduced. We calculated it. We knew until where the water would come and it happened in that way” (*interview project director*). These discussions around the floodings highlight that bridging the knowledge gap between residents and water management experts is difficult. Although there were various

platforms for participation and people have been involved from the beginning, some experts and residents have a different understanding of the project. It also shows that expert knowledge is seen as more legitimate since the inhabitants are portrayed as having the wrong understanding of the project. The inhabitants try to contest this expert knowledge but feel they are opposed by the governments (*interview dairy farmer & excursion leader Broekhuizenvorst*).

Ratio vs emotion?

The impact of the flooding in the area is big. Several farmers are worried about their business and when they do not get compensated for the damage, they will be forced to sell their business. People are very frustrated and emotional. The damage of the floodings created a lot of stress. According to a horticulturist in Broekhuizenvorst: "I will not get older of this (...) It eats me up, the frustration is high". "The governments first want to investigate if it is an unwanted consequence but for the affected people this does not matter. According to the LLTB, there might not be a solution, but you can give them the feeling that you understand them" (*interview LLTB*). Various governments (e.g. municipality, province, waterboard) emphasize that one should focus on the broader picture. "Three or four people are disappointed about how it turned out in July, in comparison with thousands in the area who are positive" (*interview Dijkgraaf*). Also the municipality highlights that it is necessary to focus on the broader picture. 'People from the area are very emotional. However, they knew there is a risk for flooding because they live in a lower area. We wait for the evaluation and recommendations before we do anything (...). We only want small modifications because we do not want to end up with a Ooijen-Wanssum 2.0. You have to look at the broader picture' (*interview Horst aan de Maas*). In October 2021 an evaluation was published in which was concluded that the measures in Ooijen-Wanssum worked as planned (van den Herik, Walboomers, Lucassen & Reinders, 2021). The evaluation was conducted by former members of the project bureau. In this case, inhabitants are considered to be too emotional and to have a wrong understanding of the project. This maintains a knowledge hierarchy between experts and inhabitants. It is used as an argument to exclude inhabitants from decision-making on how to solve this issue and only technical experts are recognized as legitimate participants, which is an example of depoliticizing participation (Mitchell & Ejderyan, 2020). It highlights that in this case the government fails to give space for both individual experience and the broader socio-cultural context, whereas for successful participation in water governance both the individual and societal level should be addressed (Morales & Harris, 2014). It shows that the impact of these projects on different levels should be considered since the impact of the project on individual level has been neglected after the project.

Clear boundaries?

Often the focus is on the initiation period and implementation in which people don't feel heard (*interview J. Warner*). However, in Ooijen-Wanssum this was also an issue after the formal ending of the project. The farmers, who were affected by the floodings are especially frustrated that it is difficult to reach the government. Recently everything has been transferred from the project bureau to the responsible institutions. The farmers feel they are sent back and forth between the various governments without any results. "I blame the government for this. No one showed up" (*interview farmer & excursion leader Broekhuizenvorst*). Another farmer said: "At this moment we are in a vacuum. Where do we have to go?". He feels the project bureau thinks that the responsible governments (municipality and province) will solve his problem and he feels neglected by these governments since he did not get any response. For example, he was surprised when the municipality send him an invitation for an evaluation meeting. He thinks it would have helped him if he was informed about this evaluation. In his opinion such big projects should think

about aftercare (*nazorg*) (*interview horticulturist Broekhuizenenvorst*). It highlights that the feeling of being heard is crucial. However, not only during but also after co-creation processes (*interview J. Warner*).

Formally the project ended and the collaboration process ended. “One enters the area as a guest and you leave as a guest, you are just there for a limited period of time. However, the people continue (...). You enter a process and you leave, it is quite harsh” (*interview investigator Habiforum*). However, in reality these boundaries are rather fluid and the transition from project to management is often problematic (*interview investigator Habiforum*). “One enters a canyon, we should manage the transition period smarter, it leads to disappointments each time. There is a beautiful party and all contracts ends and everything is back to business as usual” (*interview investigator Habiforum*). Open communication and being informed about what happens is crucial for co-creation processes (Rădulescu *et al.*, 2020). However, also after the formal ending of a project open communication and information dissemination is crucial. It also shows that negotiations and contestations about what the environment should look like are not finished when the project ended. In Ooijen-Wanssum a group of farmers contested the project after its formal ending. It also shows that the more resilient and sustainable environments that co-creation aims to contribute to are always in the making and under negotiation. People continue to engage with the environment and the issue of water safety.

8.5 Conclusion

This chapter shows that co-creation and participation have diverse impacts. It highlights that evaluating a project in terms of success or failure is too simplistic. There is a need to consider the diverse impacts of these processes. Ooijen-Wanssum is an example of how things could be instead of how it should be. The project did result in new and innovative ways of project design and implementation like the steep edge dyke. Nevertheless, some people feel excluded. There is a tendency to neglect individual suffering and to focus on the impact of these project on societal level. However, both local and societal impact matter. These different scales interact in diverse and complex ways. For example, the design is both adapted to the local context by including traditional landscape elements and is influenced by wider trends and concepts such as nature-based solutions.

The influence of co-creation on knowledge is diverse. There has been a bias towards expert knowledge and residents were considered to be too emotional in some cases. However, at the same time during the project there have been various efforts to include residents and bridge the knowledge gap between experts and inhabitants and involve them in the design and implementation of the project.

The case of Ooijen-Wanssum highlights that dynamics in co-creation processes are context dependent. When the project ended and new discussions came up, the relations between the different actors radically changed. Residents had more difficulties in reaching the government and felt excluded. The five governments worked together during the project but after its implementation the management and maintenance has been fragmented.

It also matters what is included and excluded in the evaluation of these processes. The case of Ooijen-Wanssum discussions on management arose after the formal ending of the project. Management and maintenance are not included in the project or participation process, but it is not isolated from it either. The case of Ooijen-Wanssum raises the question if a project can be successful if management and maintenance are not arranged. It is also quite remarkable that in the case of Ooijen-Wanssum resistance increased after the implementation of the project since it had different impacts for some residents than expected.

9. Discussion

9.1 Discussion of results: scale, narratives of success and rights of nature

Throughout this research, it became apparent that co-creation processes take place across multiple scales. For example, the idea of restoring the Oude Maasarm has been initiated by a national network and has been adapted to the regional context. Recognizing that co-creation processes take place at multiple levels opens up the opportunity to acknowledge that the individual and societal impacts of these projects are different and interact in various ways. It would give space to recognize individual suffering of people in Ooijen-Wanssum who have lost their land or house at the same time as highlighting that the project opened up possibilities for business expansion and improved water safety upstream. Including the concept of scale in the analysis of co-creation processes is important to understand the diverse impacts of water management projects and politics and to show how these ideas are connected to broader discourses and practices (Harris, 2011). For example, in the case of Ooijen-Wanssum shifting perspectives in water management in the Netherlands and efforts of the province of Limburg to improve acceptance of water safety projects opened up the possibility to implement the project in a particular way.

Ooijen-Wanssum has been presented as a successful example of co-creation in the Dutch water sector. However, this success is contested. The concept of narratives of success can be used to analyze how and why these water management projects are sold as a success (Warner & van Buuren, 2011). It highlights that co-creation produces and reproduces a specific imaginary of water and related policy ideas and labels, creating narratives of success and failure. Co-creation is claimed as the way forward and is one of the pillars of the IRM (Integrated River Management) program of the Dutch department of I&W together with regional politicians and other stakeholders. In the IRM program river management and water safety issues are combined with other functions like water quality, nature and economic development. Ooijen-Wanssum has been appointed by the government as one of the example cases in terms of area centered approach for IRM projects in the Maas area (van den Brand, Bijker & Daamen, 2020). It is considered to be a future proof, less expensive and more coherent way of solving water issues (POW, n.d. B). A lot of energy is devoted to generating guidelines and memorandums on co-creation and IRM. However, the actual impact of these co-creation processes has not received much attention and often there is a gap between the success narrative and the actual impacts (van Buuren *et al.*, 2019; Goodwin, 2019).

These water projects often need to be 'sold' as a success from the beginning to justify the high and often risks expenditures that are needed for these projects. This means that narratives of success can be used to legitimize a particular course of action and can be used strategically to reach a certain goal (Warner & van Buuren, 2011). Depending on the context, this pressure for success can create opportunities or challenges for negotiation and participation (interview D. Roth). "To actually become successful, a policy model requires an influential institutional and discursive network that produces but also promotes and extends the model by means of alliance building" (Rodriguez de Francisco & Boelens, 2015:482-483). This is framed as epistemic communities: "Networks of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain (Haas, 1992 as cited in Rodriguez de Francisco & Boelens, 2015:483). It highlights how policymaking and assumed causes and effects in success stories are "socially produced discourses" which create a 'particular virtual reality that tends to generate an indifference toward on-the-ground existing realities and diverse alternative realities" (Rodriguez de Francisco & Boelens, 2015:483; c.f. van Hecken, Bastiaensen & Huybrechts, 2015). Questioning the results of co-creation and related discourses is needed

to be able to (re)politicize co-creation and participatory processes and create an opening for different ways of relating to the environment. It highlights that decisions around water management are highly subjective and influenced by emotions, relationships, power dynamics and shifting subjectivities (Morales & Harris, 2014).

Emerging ideas like Rights of Nature (RoN) could also offer an interesting perspective on water management and participation. In the case of the Maas several actors are advocating for granting legal personhood to the Maas to reduce pollution and degradation of river resources (*interview IVN*; O'Donnel & Talbot-Jones, 2018). These new ideas and movements could change the political agendas and open up or close down possibilities to implement specific solutions in the water management sector (*interview D. Roth*). Approaches like RoN are often seen as the way forward in environmental governance. However, it can also be used as a strategic tool by powerful actors to limit participation by applying RoN to neutralize and reduce political opposition (Valladares & Boelens, 2019). Because of the impossibility to define Nature and related RoN, different actors can claim a definition that is convenient for them and use these to defend continuation of the status quo. Therefore, RoN does not necessarily result in nature conservation and restoration (Valladares & Boelens, 2019).

RoN would offer a new perspective in co-creation and participation processes since nature would be one of the actors in these processes. One of the dilemmas in RoN comes in if humans claim that nature itself (as subject) can participate 'on its own' in human directed co-creation processes. Co-creation is based on the idea of equitable participation but interaction between humans and non-humans is highly unequal since the non-human can only be understood from the perspective of the human and therefore, these discussions will reflect different discourses about nature from the human perspective. Therefore, new tools for participation are required. In other cases several opportunities have been explored, e.g. the parliament of things or the embassy of the North Sea (Parliament of things, n.d.). In the exhibition *Machtige Maas* (Powerful Maas) in the Limburgs Museum, a new relation between the Maas and humans has been explored and the Maas is portrayed as a powerful lady and muse. The exhibition aimed to raise questions on how humans live with the river (Simmelink, 2022).

In the case of Ooijen-Wanssum including nature could have involved various discussions around what the river values and what is success according to the river. For example, the success of the project would no longer be solely defined by water safety norms but by how it contributed to allowing the river and organisms living in/along the river to thrive. Success could be evaluated in terms of biodiversity or opportunities for river dynamics, etc. Nevertheless, there is a need to be careful to assign human attitudes, emotions and values to the river since this could be a way of humanizing rivers and still not respecting a river for its own being. Although RoN could offer interesting perspectives on co-creation and participation it also adds more complexity in understanding participation and co-creation processes since involving nature as an actor is highly debated. For example, what if humans and nature have contradictory interest, e.g. a dyke that limits the possibility of the river to flow but limits the impact of flood disasters for humans, are humans or nature prioritized and who should determine this?

Implementing RoN in co-creation processes involves critical reflections on who should defend nature and what their drivers are. It includes debates around who is able to speak for the Maas and who is able to determine what the Maas wants and what is acceptable for the river. Although MaasCleanUp advocates for granting legal personhood to the Maas, the question who should speak for nature remains open. According to two interviewees connected to MaasCleanUp experts on RoN should determine this (*interview IVN*; *interview*

H. Waterval, 11-10-2021). However, different stakeholders might disagree about who should be the expert to design this institution and this institution could also be coopted by powerful actors who might not have an interest in nature conservation. At the same time it has the opportunity to connect people with different backgrounds who give different meanings to the river. For example, in Limburg inhabitants refer to the river as Mooder Maas (Mother Meuse), whereas engineers from RWS might be more focused on improving flood safety. RoN also would involve creating another institution besides the various organizations that are already involved in water management. Critical thinking about why new regulations and institution would be able to do what current regulation and institutions fail to do is needed (*interview D. Roth*). Besides this, critical reflection of other cases where RoN have been applied can be helpful. MaasCleanUp refers to the case of Whanganui, New Zealand is often considered as successful example of RoN. However, it has been the outcome of a decade long struggle and is still highly debated (*interview D. Roth*). It should be acknowledged that RoN and related ideas are by no means unproblematic and when these alternative methods fail to address the root causes of contestation, conflict and power differences, their contribution to the participation process is limited (*interview D. Roth*).

9.2 Reliability of research

I used the concept of co-creation to analyze the data. I identified several factors for effective co-creation processes such as skills, values, politics and policies. However, during data collection I found out that including all these indicators in my analysis is not possible because of data management and time reasons. Therefore, some of the nuances and complexities in co-creation processes have been overlooked. The choice for the concept enabled me to shed light on the diversity of factors that contribute to co-creation processes but at the same time disabled me from diving deeper into values, personal characteristics or power relations. Beforehand no choice on what to include or exclude has been made. During data collection I mainly asked follow-up question about topics that interested me personally e.g. the maintenance and management and I intuitively choose to focus on several of the factors (e.g. contextual conditions) that contribute to co-creation. However, making this choice beforehand could have helped to have a clear focus for this research and ask more in-depth questions.

The interviews were conducted in Dutch, however for the report I choose to translate the quotes to English. Translation has led to a loss of nuances and connotations, which directly affects data quality. Especially when interviewees used Dutch expressions and sayings, I was not always able to find an English equivalent. Due to Covid and personal circumstances I was only able to visit the area a few times. Therefore, I have not been able to fully understand social ties within the community, which impacted the data quality. For example, various farmers mentioned that they felt the relation between farmers and villagers changed but I was not able to get the perspective from the villagers. One of the interviewees mentioned that people in Blitterswijk felt neglected because although the village is located in Maaspark Ooijen-Wanssum, it is not mentioned in the name. I did not look into how the different villages in the project area are related to each other and how this might have resulted in different opinions about the project.

It took about 15 years from initiation to implementation of the project in Ooijen-Wanssum. This is quite a long period and people have lost some of the details of the process. There is a tendency to forget the negative impacts of the project and focus on the result. However, official publications from this period show that there were actual contestations and conflicts. For the initiation phase mainly official publications were used. This limited the possibilities to access detailed information. Because of this some of the dynamics during the initiation and

plan development phase might not have been discussed in this report since people no longer remembered them.

9.3 Implications for other cases

The outcomes of this research are theory and context dependent. The fieldwork was performed in a specific moment in time and the research process has been shaped by my observations and personal experiences. This research can offer some valuable insights but performing the same research methods at a different moment in time would give other insights in the case. Applying it to another case would produce entirely different results.

Relatively few studies discuss co-creation in the planning field or water sector, compared to the number of publications about co-creation in other sectors such as health care and education (Rădulescu *et al.*, 2020). This study contributes to a more in-depth understanding of co-creation in the water sector. However, also various sources on co-creation in other sectors were used (e.g. Voorberg *et al.*, 2015). Various studies (see van Buuren *et al.*, 2019 for a list of examples) discuss the hindering and enabling factors of co-creation processes in different contexts. This literature has been used to identify several factors that should be considered when analyzing co-creation in Ooijen-Wanssum.

In the face of the current nitrogen crisis in the Netherlands the case of Ooijen-Wanssum offers an interesting perspective. In Ooijen-Wanssum a coalition of five governments was able to buy out farmers in the area without large-scale resistance and protests. The way the co-creation process was shaped in Ooijen-Wanssum is considered as one of the reasons for relatively limited resistance (*interview stakeholder relation officer*). However, the context and spatial scale are very different and therefore, what worked in the case of Ooijen-Wanssum cannot be easily applied in the context of the nitrogen crisis. Nevertheless, some general insights, e.g. making people part of the plan to reduce resistance offer an interesting perspective for the nitrogen crisis.

North of Venlo, close to Ooijen-Wanssum four different governments are exploring the possibilities to redevelop the flood plain area and combine different functions of the river (Waterschap Limburg, 2022). They want to apply a similar approach as in Ooijen-Wanssum. However, since the context is different, the process cannot be compared to Ooijen-Wanssum. Even within the case the dynamics in the participation process in each of the four affected villages are very different (*interview stakeholder relation officer*, 05-10-2021). It shows that these processes vary greatly from place to place and that co-creation processes are situated in a particular context and are shaped by processes that occur across various scales. In the context of climate change understanding the dynamics in these processes will become increasingly important since more water safety projects will be implemented in the Netherlands and worldwide and river management will become increasingly complex and contested (Ritzema & van Loon-Steensma, 2018).

9.4 Recommendations

Giving space to subjectivity and emotion in participatory water management could contribute to a more in-depth understanding of co-creation and participation (Morales & Harris, 2014). This could include research on the role of emotions in co-creation processes, investigating the use of art-based methods to explore new perspectives and solution strategies or examine the views and values of different actors (Morales & Harris, 2014).

Considering participation and co-creation as emotive processes can offer new perspectives to environmental governance. This involves critical reflection about whom participatory processes motivate to get engaged and whom they do not (Peltola, Åkerman, Bamberg, Lehtonen & Ratamäki, 2017). Therefore, it is crucial to create space for reflection during the

project. This can be done by organizing reflection meetings in which key government officials discuss the participation project with professionals from other areas (*interview investigator Habiforum*). Seeing emotions as source of knowledge in environmental governance could be an opening to close the gap between citizens experience and governance structures. Initiatives like MaasCleanUp actively engage in promoting new ways of relating to the environment.

In Ooijen-Wanssum participation can be categorized as invited participation. More research on what co-creation looks like in different contexts and how different forms of participation lead to differed outcomes of co-creation processes is needed to understand the impact of co-creation processes.

In Ooijen-Wanssum the dynamics between actors radically changed when the project was finished and new discussions on management and maintenance emerged. Because of logistical reasons management and maintenance are not part of water safety projects. It raises the questions if co-creation is strictly tied to water management projects and how these projects related to daily management and maintenance after the project. Research on the management and maintenance of water management projects could offer new insights into the impacts of co-creation and the boundaries of co-creation processes.

Co-creation is considered to be the way forward in flood safety projects. However, a participatory approach should not only be applied during these projects. Ooijen-Wanssum shows that the boundaries of participation processes and co-creation are not in line with project time frames. However, these projects cannot last forever. Therefore, it is important to think about possibilities for co-creation beyond project boundaries. In the case of Ooijen-Wanssum this could involve creating an organization in which the affected governments and other affected stakeholders work together to create a coherent management plan for Maaspark. This has been done in the case of national park Hollandse Duinen in which 6 organizations signed a collaboration agreement and organize the management of national park Hollands Duinen together (Nationaal park Hollandse Duinen, n.d.). Also, some of the factors that contributed to project acceptance in Ooijen-Wanssum, e.g. accessibility of the projectbureau and open communication should not be restricted to projects. The feeling of being neglected by the government and being not taken seriously created a lot of stress and frustration after the floods in July 2021 in Ooijen-Wanssum. This could involve clear communication about government plans, responding to peoples' emails and questions and preventing people being send back and forth between different government institutions. Both during and after the project managing relations with stakeholders is crucial.

The case of Ooijen-Wanssum shows that participation and co-creation processes cannot be fully controlled. Therefore, it is needed to evaluate participation during the process and create budget to do so. Allowing flexibility and adapt the project to time and place is important (*interview investigator Habiforum*). This implies that not everything can be defined beforehand and that the scope of a project should be flexible. This also creates the opportunity to involve directly affected stakeholders from the start and include them in decision-making and design.

10. Conclusion

In this research I answered the following question: *How do different stakeholders participate in co-creation processes in the project in Ooijen-Wanssum and with which results?*

This case study shows that participation and co-creation processes are highly dynamic. During the project various platforms for participation emerged (e.g., kitchen table conversations, village council meetings and design workshops) in different phases of the project. Depending on the phase of the project different people have been involved. During the initiation phase only directly affected stakeholders were involved whereas during the plan development phase all residents were involved via village council meetings and interest groups. When construction started, participation was again limited to directly affected stakeholders who became involved in making the final designs.

This research shows that it can be difficult to cross boundaries between different stakeholders. In Ooijen-Wanssum multiple networks around one shared problem was formed. For example, during the initiation phase there was a network with Habiforum and the involved governments and Habiforum and inhabitants. This created friction later, because inhabitants had the feeling that the government was not involved. These networks are also temporarily, after the dismantling of the project bureau it fell apart and the same governments are having difficulties in arranging maintenance and management of Maaspark Ooijen-Wanssum.

Although the participation process and buying of land created stress for the farmers and was emotional, most of them are positive towards the project. It highlights that the feeling of being heard has major influence on acceptance of the project. Open communication about the process, accessibility of the project team and the feeling that one's perspective is reflected in the design contributed to this. The role of the stakeholder relation officer has been crucial in this process and his accessibility contributed to acceptance of the project. This research shows that it is crucial who is working on the project, since the participation process was largely shaped by the ideas of a few key actors (e.g., province, stakeholder relation officer).

Besides this, no scope was defined beforehand, which opened up the possibility to involve stakeholders from the beginning. Local stakeholders were involved in deciding the preferred strategy for the project and the tender committee. Also, various other projects in Limburg had failed because of resistance and after the floods of '93 and '95 there was a pressure to improve flood safety in the area. These factors together had a big impact on how the co-creation and participation process has been structured. This research has shown that co-creation processes and the initiation of water management projects develop in a particular context and are shaped by many factors (e.g., availability of funding, local culture, attitude of stakeholders) and intersect with other political processes, institutional arrangements and power relations at different levels.

This research shows that co-creation process do not have the same boundaries as the actual project. The co-creation process started before the actual project and is not finished when the project formally ends. In Ooijen-Wanssum new discussion around management and maintenance and the cause of the July 2021 floods in the area arose. Co-creation processes evolve around a specific problem, water safety in this case. However, these are wicked problems and therefore a project is never the final solution. Therefore, discussion around participation and co-creation continue since people continue to produce and reproduce the environment they live in.

Participation in Ooijen-Wanssum is presented as the way things should go. However, the results of the project are diverse, some farmers regret the loss of land whereas some villagers enjoy the new nature. Even at individual level the results are diverse. For example, for the farmer who claims his flood damage was caused by the project, the project also provided an opportunity to expand his business. The focus is often on societal impact of the project and individual suffering is neglected. This can create divisions between residents of the area, some of the farmers feel that their perspective is not fully understood by other inhabitants. In the long term only the result is remembered and the issues are easily forgotten. For a local musician it already feels as if it was never different. There is a need to acknowledge the diverse impacts on different levels of the project in Ooijen-Wanssum. Acknowledging that co-creation and participation are inherent to conflict and resistance and have diverse results opens up the space to analyze co-creation and participation as political spaces. There is a need to look at who is advantaged and who is disadvantaged and in which way. Participation and co-creation are context dependent and these processes will unfold in diverse ways across provinces, municipalities and regions. Although various factors that have an influence on co-creation can be identified, the process unfolds itself and cannot be fully predicted beforehand. It is needed to investigate the diverse impacts of co-creation at different levels to open the black box of co-creation processes. In the face of climate change and related increase of extreme weather events and sea level rise, understanding dynamics in participation processes related to water management projects will become increasingly important.

References

- Allen, K. H. (2018). Blurred Borderlands: Sustainability and the Urban/Nature Divide at the Frick Environmental Center. *Environmental Communication*, 13(8), 1009-1023. <https://doi.org/10.1080/17524032.2018.1553203>
- Anderson, E. P., Jackson, S., Tharme, R. E., Douglas, M., Flotemersch, J. E., Zwarteveen, M., ... & Arthington, A. H. (2019). Understanding rivers and their social relations: A critical step to advance environmental water management. *Wiley Interdisciplinary Reviews: Water*, 6(6), e1381. <https://doi.org/10.1002/wat2.1381>
- Asselman, N., Barneveld, H., Klijn, F., van Winden, A., (2019) *Het verhaal van de Maas*. Available online [11-07-2022] <https://www.deltaprogramma.nl/gebieden/rivieren/maas>
- Birkmann, J., Buckle, P., Jaeger, J., Pelling, M., Setiadi, N., Garschagen, M., ... & Kropp, J. (2010). Extreme events and disasters: a window of opportunity for change? Analysis of organizational, institutional and political changes, formal and informal responses after mega-disasters. *Natural hazards*, 55(3), 637-655.
- Brink, van den, M., Termeer, C., & Meijerink, S. (2011). Are Dutch water safety institutions prepared for climate change?. *Journal of Water and Climate Change*, 2(4), 272-287. <https://doi.org/10.2166/wcc.2011.044>
- Boelens, R., Hoogesteger, J., Swyngedouw, E., Vos, J., & Wester, P. (2016). *Hydrosocial territories: a political ecology perspective*. 41(1), 1-14. <https://doi.org/10.1080/02508060.2016.1134898>
- Brand, van den, P., Bijker, F., & Daamen, E. (2020) *IRM pilots langs de Maas, 2020*, INFRAM
- Bulletti Mitchell, N., & Ejderyan, O. (2020). When experts feel threatened: Strategies of depoliticisation in participatory river restoration projects. *Area*, 53(1), 151-160. <https://doi.org/10.1111/area.12686>
- Buuren, van, A., van Meerkerk, I., & Tortajada, C. (2019). Understanding emergent participation practices in water governance. *International Journal of Water Resources Development*, 35(3), 367-382. <https://doi.org/10.1080/07900627.2019.1585764>
- Cretney, R. (2014). Resilience for Whom? Emerging Critical Geographies of Socio-ecological Resilience. *Geography Compass*, 8(9), 627-640. <https://doi.org/10.1111/gec3.12154>
- Cuijpers, J. (2020). *Petitie tegen sloop historische kloostermuur Blitterswijck*. Available online [02-02-2022] https://www.limburger.nl/cnt/dmf20200214_00147701
- Daalder, J., Rademaker, P., van Bakel, N. (2021). *In Limburg zie je: zo makkelijk komt een provincie onder afspraken over natuur uit*. Available online [10-07-2022]. <https://decorrespondent.nl/12724/in-limburg-zie-je-zo-makkelijk-komt-een-provincie-onder-afspraken-over-natuur-uit/1866753894104-59384ab3>
- Deltaprogramma (n.d.) *Wat is het nationaal deltaprogramma?* Available online [19-3-2021] <https://www.deltaprogramma.nl/deltaprogramma/wat-is-het-deltaprogramma>
- Deltaprogramma (2020) *Deltaprogramma 2021*. Available online [18-07-2022] https://dp2021.deltaprogramma.nl/2-zesjaarlijkse-herijking.html#h2_3
- DLG, Dienst Landelijk Gebied (2015) *Analyse landbouweffecten Gebiedsontwikkeling Ooijen-Wanssum*. Available online [11-07-2022] <https://www.ooijen-wanssum.nl/media/documents/Landbouweffecten%20Gebiedsontwikkeling%20Ooijen-Wanssum%20DLG-rapport%20jan%202015%20hoge%20resolutie.pdf>
- DuraVermeer (n.d) Ooijen-Wanssum. *Ooijen-Wanssum*. Available online [11-07-2022] <https://www.duravermeer.nl/projecten/gebiedsontwikkeling-ooijen-wanssum/>
- Edelenbos, J., Van Buuren, A., Roth, D., & Winnubst, M. (2017). Stakeholder initiatives in flood risk management: exploring the role and impact of bottom-up initiatives in three 'Room for the River' projects in the Netherlands. *Journal of environmental planning and management*, 60(1), 47-66. <https://doi.org/10.1080/09640568.2016.1140025>
- Gemeente Venray (2020) *Venray in Cijfers*. Available online [03-09-2021] <https://venray.incijfers.nl/dashboard/buurt-en-wijkdata>

- Goodwin, G. (2019). The problem and promise of coproduction: Politics, history, and autonomy. *World Development*, 122, 501–513. <https://doi.org/10.1016/j.worlddev.2019.06.007>
- Gralepois, M. (2020). What can we learn from planning instruments in flood prevention? Comparative illustration to highlight the challenges of governance in Europe. *Water*, 12(6), 1841. <https://doi.org/10.3390/w12061841>
- Hajer, M., Grijzen, J., van 't Klooster, S. (2010). *Sterke verhalen: Hoe Nederland de planologie opnieuw uitvindt*. 010 Publishers: Rotterdam
- Harris, L. M. (2011). Neo (liberal) citizens of Europe: politics, scales, and visibilities of environmental citizenship in contemporary Turkey. *Citizenship Studies*, 15(6-7), 837-859. <https://doi.org/10.1080/13621025.2011.600095>
- Hecken, van G., Bastiaensen, J., & Huybrechs, F. (2015). What's in a name? Epistemic perspectives and Payments for Ecosystem Services policies in Nicaragua. *Geoforum*, 63, 55-66. <https://doi.org/10.1016/j.geoforum.2015.05.020>
- Herik, van den, K.J. & van Rooy, P. (2008) *Gebiedsontwikkeling Ooijen-Wanssum: synopsis van verkenning*. Available online [03-09-2021] <https://www.ooijen-wanssum.nl/media/documents/Synopsis%20verkenning.pdf>
- Hoof, van J. (2021) *Limburg heeft na maanden weer nieuw provincie bestuur*. Available online [10-07-2022] <https://www.1limburg.nl/limburg-heeft-na-maanden-weer-nieuw-provinciebestuur>
- InnovatieNetwerk (2004) *Ruimte voor nieuwe rivieren*. Available online [21-02-2021] <https://www.stroming.nl/sites/default/files/2017-02/flyernieuwrvier.pdf>
- Jones, P. (2018). *Contexts of Co-creation: Designing with System Stakeholders* (pp. 3–52). Springer, Tokyo. https://doi.org/10.1007/978-4-431-55639-8_1
- Klooster, van 't & Hajer (2010) *Een nieuwe rivier in Ooijen-Wanssum? Een evaluatie van het beleidsproces*. Available online [01-09-2021] <https://edepot.wur.nl/154148>
- Kumar, P., Debele, S. E., Sahani, J., Aragão, L., Barisani, F., Basu, B., ... & Zieher, T. (2020). Towards an operationalisation of nature-based solutions for natural hazards. *Science of the Total Environment*, 731, 138855. <https://doi.org/10.1016/j.scitotenv.2020.138855>
- Leino, H., & Puumala, E. (2020). What can co-creation do for the citizens? Applying co-creation for the promotion of participation in cities. *Environment and Planning C: Politics and Space*, 239965442095733. <https://doi.org/10.1177/2399654420957337>
- LLTB (2015) *Informatiebijeenkomst gebiedsontwikkeling Ooijen-Wanssum*. Available online [25-04-2022] <https://www.lltb.nl/nieuwsberichten/website/2015/06/informatiebijeenkomst-gebiedsontwikkeling-ooijen-wanssum>
- MaasCleanUp (no date.) *Jessica den Outer, ambassadrice Maas CleanUp*. Available online [11-07-2022] <https://maascleanup.nl/artikel/jessica-den-outer-ambassadrice-maas-cleanup/>
- Medema, W., Adamowski, J., Orr, C., Furber, A., Wals, A., & Milot, N. (2017). Building a foundation for knowledge co-creation in collaborative water governance: Dimensions of stakeholder networks facilitated through bridging organizations. *Water*, 9(1), 60.
- Meijerink, S. (2005). Understanding policy stability and change. The interplay of advocacy coalitions and epistemic communities, windows of opportunity, and Dutch coastal flooding policy 1945–2003. *Journal of European public policy*, 12(6), 1060-1077.
- MiniKoerier (2020) *Welkom in het Maaspark Ooijen-Wanssum*. Available via info@minikoerier.nl
- Morales, M. C., & Harris, L. M. (2014). Using subjectivity and emotion to reconsider participatory natural resource management. *World Development*, 64(2014), 703-712. <https://doi.org/10.1016/j.worlddev.2014.06.032>
- Nationaal Park Hollandse Duinen (no date) Organisatie. Available online [16-08-2022] <https://www.nationaalparkhollandseduinen.nl/organisatie/>
- Natuurlijke Klimaatbuffers (no date) *Natuurlijke Klimaatbuffers*. Available online [13-07-2022] <https://www.klimaatbuffers.nl/natuurlijke-klimaatbuffers>

- O'Donnell, E. L., & Talbot-Jones, J. (2018). Creating legal rights for rivers. *Ecology and Society*, 23(1).
- Parliament of things (no date) *Parliament of things*. Available online [27-08-2022] <https://theparliamentofthings.org/>
- Peel&Maas (2013) *Leon Litjes voorzitter klankbordgroep*. Available online [22-04-2022] <https://www.peelenmaasvenray.nl/nieuws/venray/51964/leon-litjes-voorzitter-klankbordgroep?redir>
- Peel&Maas (2014). *Den Schellaert behouden*. Available online [02-05-2022] <https://www.ooijen-wanssum.nl/media/documents/Den%20Schellaert%20behouden.26062014.pdf>
- Peltola, T., Åkerman, M., Bamberg, J., Lehtonen, P., & Ratamäki, O. (2018). Emergent publics and affects in environmental governance. *Journal of Environmental Policy & Planning*, 20(2), 157-169 <https://doi.org/10.1080/1523908X.2017.1343135>
- ProDemos (no date) *Wat doet de gemeente?* Available online [11-07-2022] <https://prodemos.nl/kennis-en-debat/publicaties/informatie-over-politiek/de-gemeente/wat-doet-de-gemeente/>
- Projectbureau Ooijen-Wanssum (no date A) *Basisreapportage Regeling Grote Projecten*. Available online [10-02-2022]. <https://limburg.bestuurlijkeinformatie.nl/Document/View/d5e2af55-efc9-4f00-bf6d-19dc7bd7ba28>
- Projectbureau Ooijen-Wanssum (no date B), *Gebiedsplan Ooijen-Wanssum*. Available Online [21-01-2021] <http://www.ooijen-wanssum.nl/media/documents/Gebiedsplan%20Ooijen-Wanssum.pdf>
- Projectbureau Ooijen-Wanssum (no date C) *Tijdljn*. Available online [21-01-2021] <https://www.ooijen-wanssum.nl/gebiedsontwikkeling/tijdljn/>
- Projectbureau Ooijen-Wanssum (no date D) *Prijzen*. Available online [01-08-2022] <https://www.ooijen-wanssum.nl/gebiedsontwikkeling/prijzen/>
- Projectbureau Ooijen-Wanssum (2015 A). *Gebiedsontwikkeling Ooijen-Wanssum Beschermingsaanpak*. Available online [09-02-2022] <https://www.ooijen-wanssum.nl/media/documents/Bijlage%2047.%20Beschermingsaanpak.pdf>
- Projectbureau Ooijen-Wanssum (2015 B). *Hoofdrapport MER Gebiedsontwikkeling Ooijen-Wanssum*. Available online [09-02-2022] https://www.ooijen-wanssum.nl/media/documents/POW_MER_webversie.pdf
- Projectbureau Ooijen-Wanssum (2016) *Ontwerpatelier centrum Wanssum*. Available online [11-05-2022] https://www.ooijen-wanssum.nl/templates/ooij_2017/popup_newsletter.php?newsletter_id=42
- Projectbureau Ooijen-Wanssum (2017A) *MooderMaas van start met werkzaamheden*. Available online [30-05-2022] https://www.ooijen-wanssum.nl/templates/ooij_2017/popup_newsletter.php?newsletter_id=43
- Projectbureau Ooijen-Wanssum (2017B) *PIP herziening vastgesteld en ter inzage*. Available online [01-08-2022] <https://www.ooijen-wanssum.nl/gebiedsontwikkeling/nieuws/pip-herziening-vastgesteld-en-ter-inzage/270/>
- Projectbureau Ooijen-Wanssum (2020). *Kloostermuur Blitterswijck*. Available online [02-05-2020]. <https://www.ooijen-wanssum.nl/gebiedsontwikkeling/nieuws/kloostermuur-blitterswijck/536/>
- Projectbureau Ooijen-Wanssum (2021) *Bedankt en tot ziens*. Available online [30-05-2021] <https://www.ooijen-wanssum.nl/gebiedsontwikkeling/nieuws/bedankt-en-tot-ziens/626/>
- Projectbureau Ooijen-Wanssum & MooderMaas (2019) *Feiten & cijfers Gebiedsontwikkeling Ooijen-Wanssum*. Available online [12-04-2022] https://www.ooijen-wanssum.nl/media/documents/OW_feiten_cijfers_binnenwerk%202019.pdf
- Provincie Limburg (no date A) *Verplichte taken van de Provincie*. Available online [11-07-2022] <https://www.limburg.nl/over/organisatie/verplichte-taken/>
- Provincie Limburg (no date B) *Basisrapportage Regeling Grote Projecten*. Available online [10-03-2022] <https://limburg.bestuurlijkeinformatie.nl/Document/View/d5e2af55-efc9-4f00-bf6d-19dc7bd7ba28>

- Provincie Limburg (2008) *Meerjarenplan Zandmaas 2, 2008-2015-2050*. Dienst Landelijk Gebied. Available online [10-02-2022].
<https://limburg.bestuurlijkeinformatie.nl/Document/View/54481b3b-68e0-4b52-a272-30ae79997dff>
- Provincie Limburg (2022) *Geactualiseerde kennisgeving voornemen tot verkoop van gronden door de Provincie Limburg aan Staatbosbeheer*. Available online [25-07-2022]
<https://zoek.officielebekendmakingen.nl/prb-2022-3468.html>
- Rădulescu, M. A., Leendertse, W., & Arts, J. (2020). Conditions for Co-Creation in Infrastructure Projects: Experiences from the Overdiepse Polder Project (The Netherlands). *Sustainability*, 12(18), 7736. <https://doi.org/10.3390/su12187736>
- Rijksoverheid (no date) *Habiforum (Vrom, IenM):2001*. Available online [11-07-2022]
<https://actorenregister.nationaalarchief.nl/actor-organisatie/habiforum-vrom-ienm>
- Rijkswaterstaat (no date A) *Maas*. Available online [11-07-2022]
<https://www.rijkswaterstaat.nl/water/vaarwegenoverzicht/maas#kenmerken-maas>
- Rijkswaterstaat (no date B) *Onze organisatie*. Available online [11-07-2022]
<https://www.rijkswaterstaat.nl/over-ons/onze-organisatie>
- Rijkswaterstaat Maaswerken (2005). *De Maas van morgen: Werken aan veiligheid, natuurontwikkeling, bevaarbaarheid en grindwinning*. Available online [01-02-2022]
https://puc.overheid.nl/rijkswaterstaat/zoeken/resultaat/q/De-wt_Maas-wt_van-wt_morgen-p_-wt_Werken-wt_aan-wt_veiligheid,-wt_natuurontwikkeling,-wt_bevaarbaarheid-wt_en-wt_grindwinning/s/relevantie-wt_desc/
- Rijkswaterstaat (2018). *Factsheet Historie*. Available online [01-02-2022]
https://puc.overheid.nl/rijkswaterstaat/doc/PUC_165412_31/
- Ritzema, H. P., & Van Loon-Steensma, J. M. (2018). Coping with Climate Change in a densely Populated Delta: A Paradigm Shift in Flood and Water Management in The Netherlands. *Irrigation and Drainage*, 67, 52–65. <https://doi.org/10.1002/ird.2128>
- Rodríguez de Francisco, J. C., & Boelens, R. (2015). Payment for Environmental Services: mobilising an epistemic community to construct dominant policy. *Environmental Politics*, 24(3), 481-500. <https://doi.org/10.1080/09644016.2015.1014658>
- Rooy, van P. & van den Herik, K.J. (2007) *Gebiedsontwikkeling Oude Maasarm Ooijen-Wanssum. Nadere verkenning strategie verruiming*. Available online [26-4-2022]
http://www.broekhuizen-broekhuizenvorst.nl/dossiers/maas/files/Nadere_Verkenning_Definitief_red.pdf
- Roth, D., & Winnubst, M. (2014). Moving out or living on a mound? Jointly planning a Dutch flood adaptation project. *Land Use Policy*, 41, 233–245.
<https://doi.org/10.1016/j.landusepol.2014.06.001>
- Roth, D., Vink, M., Warner, J., & Winnubst, M. (2017). Watered-down politics? Inclusive water governance in the Netherlands. *Ocean & Coastal Management*, 150, 51-61.
- Roth, D., Köhne, M., Rasch, E. D., & Winnubst, M. (2021). After the facts: Producing, using and contesting knowledge in two spatial-environmental conflicts in the Netherlands. *Environment and Planning C: Politics and Space*, 39(3), 626-645.
- Staatsbosbeheer (no date) *Over Staatsbosbeheer*. Available online [11-07-2022]
<https://www.staatsbosbeheer.nl/over-staatsbosbeheer/organisatie>
- Steen, van der, P. & Dohmen, J. (2021) *Hoe een ex-gedeputeerde met hulp van het CDA in Limburg subsidiegeld doorsluisde naar zijn eigen bv's*. Available online [10-07-2022]
<https://www.nrc.nl/nieuws/2021/03/22/ho-e-een-ex-gedeputeerde-met-hulp-van-het-cda-in-limburg-subsidiegeld-doorsluisde-naar-zijn-eigen-bvs-a4036807>
- Simmelink, V. (2022). Muze en moordenaar: de Maas stroomt deze zomer langs de Amsterdamse grachten. Available online [15-08-2022] https://www.trouw.nl/cultuur-media/muze-en-moordenaar-de-maas-stroomt-deze-zomer-langs-de-amsterdamse-grachten~b2a1f4a7/?referrer=https%3A%2F%2Fwww.limburgsmuseum.nl%2Ftentoonstelling%2Fmachtige-maas-muze-en-moordenaar%2F&utm_campaign=shared_earned&utm_medium=social&utm_source=copylink

- Teder, M. E. (2018). Placemaking as co-creation—professional roles and attitudes in practice. *CoDesign*, 15(4), 289-307 <https://doi.org/10.1080/15710882.2018.1472284>
- Torring, J., Sørensen, E., & Røiseland, A. (2019). Transforming the Public Sector Into an Arena for Co-Creation: Barriers, Drivers, Benefits, and Ways Forward. *Administration & Society*, 51(5), 795–825. <https://doi.org/10.1177/0095399716680057>
- Valladares, C., & Boelens, R. (2019). Mining for Mother Earth. Governmentalities, sacred waters and nature's rights in Ecuador. *Geoforum*, 100 (2019), 68-79. <https://doi.org/10.1016/j.geoforum.2019.02.009>
- Vermeulen, M. (2013). *Kennis inventarisatie natuurlijke klimaatbuffer Ooijen-Wanssum*. Available online [21-02-2021] <https://www.klimaatbuffers.nl/uploads/kennisinventarisatie-ooijenwanssum.50d589.pdf>
- Voorberg, W. H., Bekkers, V. J. J. M., & Tummers, L. G. (2015). A Systematic Review of Co-Creation and Co-Production: Embarking on the social innovation journey. *Public Management Review*, 17(9), 1333–1357. <https://doi.org/10.1080/14719037.2014.930505>
- Vreugdenhil, H., & Wijermans, F. E. H. (2012). De beleidsarena van het Deltaprogramma. *Water Governance*, 6, 30-38. <https://edepot.wur.nl/431639>
- Warner, J., & Van Buuren, A. (2011). Implementing room for the river: Narratives of success and failure in Kampen, the Netherlands. *International Review of Administrative Sciences*, 77(4), 779-801.
- Waterschap Limburg (n.d.) *Wateroverlast en overstromingen tegengaan*. Available online [11-07-2022] <https://www.waterschaplimburg.nl/overons/taken/veilige-dijken-droge/>
- Waterschap Limburg (2022) *Vierwaarden*. Available online [16-07-2022] <https://www.waterschaplimburg.nl/@5755/vierwaarden/>
- Wesselink, A., Warner, J., & Kok, M. (2013). You gain some funding; you lose some freedom: The ironies of flood protection in Limburg (The Netherlands). *Environmental science & policy*, 30, 113-125. <https://doi.org/10.1016/j.envsci.2012.10.018>
- Wolsink, M. (2006). River basin approach and integrated water management: Governance pitfalls for the Dutch Space-Water-Adjustment Management Principle. *Geoforum*, 37(4), 473-487. <https://doi.org/10.1016/j.geoforum.2005.07.001>
- Wyborn, C. (2015). Co-productive governance: A relational framework for adaptive governance. *Global Environmental Change*, 30, 56–67. <https://doi.org/10.1016/j.gloenvcha.2014.10.009>
- Zegwaard, A., Petersen, A. C., & Wester, P. (2015). Climate change and ontological politics in the Dutch Delta. *Climatic Change*, 132(3), 433-444.

Internal documents

- Herik, van den, K.J., Walboomers, E., Lucassen, J. & Reinders, T., (2021) Hoogwater juli 2021 beoordeling werking Ooijen-Wanssum.

Annex 1. Overview of Interviewees

An overview of official interviews.

| | Interviewee | Organization | Date |
|----|---|--------------------------------|------------|
| 1 | Dik Roth | WUR | 04-10-2021 |
| 2 | Huub Waterval | MaasCleanUp/Nextview | 11-10-2021 |
| 3 | Local musician | | 19-10-2021 |
| 4 | Local teacher | - | 26-10-2021 |
| 5 | Horticulturist Broekhuizenenvorst | - | 26-10-2021 |
| 6 | Susan van 't Klooster | Consultant | 01-11-2021 |
| 7 | Sylvia Spierts | IVN | 05-11-2021 |
| 8 | Dairy Farmer Broekhuizenenvorst | - | 09-11-2021 |
| 9 | Manager port of Wanssum | Port of Wanssum | 09-11-2021 |
| 10 | Project leader | Municipality Horst aan de Maas | 15-11-2021 |
| 11 | Project leader | Waterboard Limburg | 16-11-2021 |
| 12 | Moved-out inhabitant | - | 16-11-2021 |
| 13 | Chair Village Council | Dorpsraad Broekhuizenenvorst | 16-11-2021 |
| 14 | Inhabitant Blitterswijk & horticulturist Blitterswijk | - | 17-11-2021 |
| 15 | Project director and design manager | MooderMaas | 18-11-2021 |
| 16 | Dairy farmer Wanssum | - | 18-11-2021 |
| 17 | Asset manager | Rijkswaterstaat | 22-11-2021 |
| 18 | Project director | Province of Limburg | 23-11-2021 |
| 19 | Inhabitants Broekhuizenenvorst | - | 24-11-2021 |
| 20 | Project leader | Municipality of Venray | 25-11-2021 |
| 21 | Government official | Staatsbosbeheer | 26-11-2021 |
| 22 | Dairy farmer and excursion leader Broekhuizenenvorst | - | 30-11-2021 |
| 23 | Dijkgraaf (chair waterboard) | Waterboard Limburg | 01-12-2021 |
| 24 | Excursion leader Wanssum | - | 01-12-2021 |
| 25 | Director | Bureau Stroming | 02-12-2021 |
| 26 | Landscape architect | HNS-landschapsarchitecten | 06-12-2021 |
| 27 | Owner Camping | Kasteel Ooijen | 07-12-2021 |
| 28 | Bird watcher from Broekhuizenenvorst | - | 07-12-2021 |
| 29 | Board member | LLTB | 09-12-2021 |
| 30 | Investigator Habiforum | NederLandBovenWater | 10-12-2021 |
| 31 | Coordinator Schone Rivieren (Clean Rivers) | Municipality Horst aan de Maas | 20-12-2021 |
| 32 | Jeroen Warner | WUR | 19-01-2022 |
| 33 | Stakeholder relation officer | Projectbureau Ooijen-Wanssum | 26-01-2022 |

Annex 2 Interview guide

This guide was used to prepare interviews. Depending on expertise different questions were added. The questions were asked in Dutch and slightly adapted to the conversation.

Overview of interview questions

1. What was your role within Ooijen-Wanssum? How did you get involved?
2. What is in your opinion the problem that the project should solve and how should it be solved?
3. How was the project initiated?
4. What were key moments in the project?
5. How have decisions been made within the project? What was your role in this?
6. With which other actors you worked together?
7. How have citizens been involved in the project? Why?
8. How should citizens have been involved in your opinion?
9. How has the project design been changed during the participation process?
10. Which factors hindered or enabled participation?
11. Which lessons did you learn?
12. Has the project been successful? Why or why not? Which factors influences this?
13. What was innovative in the project?