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faculty of spatial sciences

Cooperation in flood risk management

A close look: the roles of public and private stakeholders in flood risk management in 'het Zuidelijk Westerkwartier'



Bachelor project: Resilience in water management
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June 2017

Colofon

Title	Cooperation in flood risk management
Subtitle	A close look: the roles of public and private stakeholders in flood risk management in 'het Zuidelijk Westerkwartier'
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Year	2016-2017
Words	9797

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Preface

During the first years of my study Spatial Planning & Design I became particularly interested in how people work together and on which basis they take decisions. Especially in large projects concerning the spatial environment in which people live and work. I think it is very interesting to learn more about how interests can be totally opposite and yet people still have to make something out of it. The Netherlands is so densely populated that we have to discuss and work with each other to plan our living environment. By working together problems occur, disagreements pop up, but by taking a long breath decisions can be taken.

Writing this thesis also took a long breath, it was not easy to formulate a proper research question and to narrow the topic down, but with support and input from my supervisor Harry Hoeckner I formulated a research question and I got enthusiastic again. I would also thank him for the useful and detailed feedback, it helped me a lot to improve my thesis and to be critical in general.

The research takes a look at the project 'het Zuidelijk Westerkwartier', West of the city of Groningen. The stakeholders in this project are very enthusiastic about what they are doing and I would thank them for their valuable input and time. One of the interviewees showed me around in the project area and that helped me to get a better understanding of the current situation. Collecting the data was a great experience and a nice opportunity to have a look in the working field. It was inspiring and I cannot wait to work with you in the field of spatial planning.

Abstract

The effects of climate change, such as more intense rainfalls and prolonged periods of precipitation can have diverse effects on water bodies. These effects combined with rising sea levels and land subsidence makes areas vulnerable for flooding (Restemeyer et al., 2015). Therefore measures are taken, such as building water storage areas like 'het Zuidelijk Westerkwartier'. In such projects many different stakeholders with different interests are included. Due to these different interests challenges might occur (Fleischhauer et al., 2012). Challenges between different institutions, as well as challenges between institutions and stakeholders can be found. This research makes use of a qualitative research method to figure out the challenges in 'het Zuidelijk Westerkwartier'. Ten interviewees address current challenges in order to get an idea of how a transition in flood risk management can be made. Especially well-willingness to learn from each other and stimulating bottom-up processes seem the way towards good governance. Furthermore, the different actors should help improve increasing the flood risk awareness among citizens to make sure that water storage projects can be developed in the future as well.

Keywords: flood risk governance, flood risk management, responsiveness, public and private stakeholders, het Zuidelijk Westerkwartier

Abbreviations

BVPDD	Belangenvereniging Polder de Dijken
GSP	Grond Strategie Plan
KRW	Kaderrichtlijn Water
NBW	Nationaal Bestuursakkoord Water
PAS	Programma Aanpak Stikstof
PEEN	Pan-Europees Ecologisch Netwerk
PPPs	Public Private Partnerships
ZWK	Zuidelijk Westerkwartier

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1. Introduction

1.1 Background & social relevance

Due to climate change, sea-level will rise, periods with more intense rainfalls and prolonged periods of precipitation will occur and will lead to an increase of the probabilities of flooding in the Netherlands (Restemeyer et al., 2015). Another factor contributing to increasing flood risk in the Netherlands, due to geological processes and human activities, is land subsidence (TNO, n.d.). The occurrence of flooding has to be limited because a flooding can be regarded as an enormous natural hazard in terms of casualties and damage to property (Heintz et al., 2012). On the one hand water is a threat, but on the other hand water is a necessity of life. For example, it is important that there is enough freshwater, this is also taken into account by the Delta programme Freshwater (Deltacommissaris, 2017). This programme stresses the importance of measures that have to be taken in order to protect nature, agriculture, cities and recreation areas. It also addresses the importance of collaboration among different stakeholders in order to make sure that the quality of water, the amount of water and a climate-proof spatial design is guaranteed (Deltacommissaris, 2017 p.5).

‘Het Zuidelijk Westerkwartier’ in Groningen is one of the areas where different actors play a role to adapt water in the environment. It is an area that faces land subsidence, but also some consequences of climate change: heavy rainfalls and more precipitation during the year (Noorderzijlvest, 2014). Furthermore is the area lower than the surrounding areas and that makes the area vulnerable for flooding (Restemeyer et al., 2015). It is also necessary to have enough freshwater in this area for agriculture, nature and as drinking water for people. Therefore measures have to be taken and different stakeholders have to work together to provide those needs for the future.

1.2 Problem

The flood in 1953, the high amount of water in the Rijn and Maas in January 1995, but also other events and TV- series (*Als de dijken breken* (EO, 2016)) contribute to a general awareness that protection against floods in the Netherlands is highly important (De Boer et al., 2003). To protect the country against flooding, different stakeholders with different responsibilities have to work together in projects for water storage. Especially the government helps (by organisational and financial means) to realise these projects against floods, but by doing so the incentive of individuals to make provisions for self-protection dampens (Schwarze & Wagner, 2007). This goes against the required changes of citizens participating in projects. Because by changing the physical living environment, people will get affected. Therefore flood risk management becomes a societal task and the willingness of people to participate in the process of flood risk management is needed (Restemeyer et al., 2015).

‘Het Zuidelijk Westerkwartier’ is one of the projects for water storage in the Netherlands. The project involves different stakeholders with different interests and requirements to fulfil. The Province of Groningen has to reach European standards of nature policy and water quality (Natura2000, Kader Richtlijn Water (KRW)), Water Board Noorderzijlvest has to take care of arrangements in national and regional projects like Droge Voeten 2050, KRW, Delta programme Freshwater and Nationaal Bestuursakkoord Water (NBW). The other stakeholders also have followers and arrangements to

meet. These multiple actors and multi-layers make 'het Zuidelijk Westerkwartier' a complex project, because there is no full certainty about the final result of the project (De Roo & Voogd, 2013).

Despite of all this complexity in the project, it is important that the final result is sufficient and that there is enough storage for water. Therefore stakeholders have to reach compromises and have to cooperate. The role of citizens might be overshadowed in this process and their responsiveness might be taken away. In the literature, it is documented that people who live in areas at risk systematically underestimate the likelihood of natural disasters (Palm et al., 1990 in Schwarze & Wagner, 2007; Plapp & Werner, 2006). This results in more damage if an event happens, because people are not well prepared against a disaster. Therefore it is important that responsibility among people increases.

This study examines how different actors work together in setting up storage areas for water. Despite of the different (conflicting) interests among the actors, the actors still work collective towards a result. This study looks into the planning process of one of those water storage areas; 'het Zuidelijk Westerkwartier'. By doing so, the governance challenges – which are interlinked with the current roles of the actors - will be shown and discussed. The role of citizens in this planning process is discussed as well; how should the individual citizen take more responsibility in water storage planning projects? Which governance changes are necessary to reach a transition towards improvements of planning processes to make future projects even more successful? The results of this thesis can hopefully lead to new insights in the governance of flood risk management and thereby facilitate improvements for future collaborations.

1.3 Research area

'Het Zuidelijk Westerkwartier' is an agricultural area (mostly used for dairy industry) with some nature reserves. The borders of the area are in the North the canal 'van Starckenborgh', in the South the village 'Een-West', in the West the village 'Opende' and in the East the village 'Oostwold'. Three municipalities are located in the area: Grootegast, Leek and Marum. Furthermore, there are two Water Boards involved: Wetterskip Fryslân and Noorderzijlvest. The area consists of three different subareas, wherein the needs of nature, water, recreation, agriculture and its inhabitants will be combined. Figure 1 shows 'het Zuidelijk Westerkwartier' with the three subareas; Dwarsdiep, De Dijken and Driepolders.

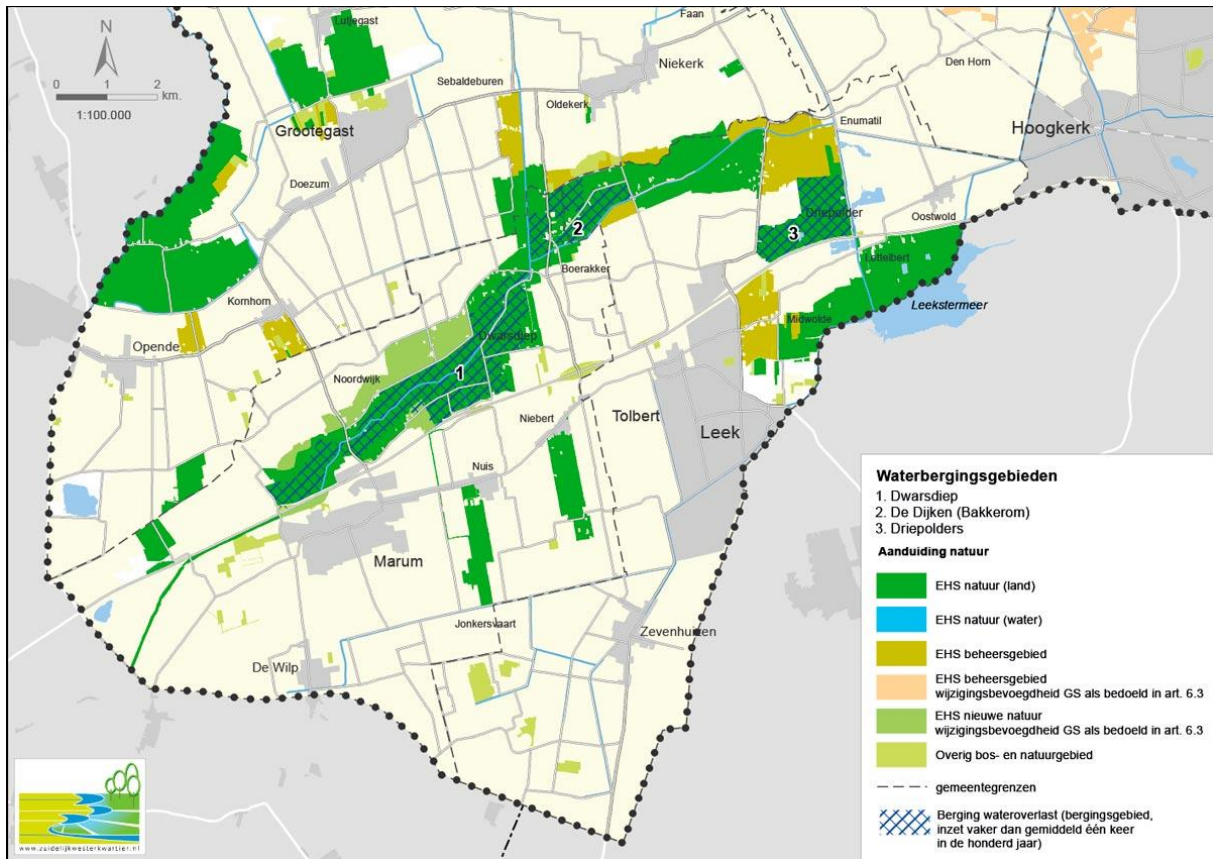


Figure 1 Project area 'het Zuidelijk Westerkwartier' with its subareas (Het Zuidelijk Westerkwartier, 2015)

1.4 Research questions

In this research the focus is how different actors work together in the project 'het Zuidelijk Westerkwartier'. The decisions actors make in order to protect the area from flooding and how they cooperate with each other is researched. Therefore the answers on the main question and sub questions will contribute to more knowledge in the field of cooperation in flood risk management.

Main question

- How can the transition, in flood risk management, towards good governance by public and private stakeholders in 'het Zuidelijk Westerkwartier' be made?

Sub questions

- How do public and private stakeholders look upon their current roles in the field of flood risk management in 'het Zuidelijk Westerkwartier'?

- Which governance challenges do public and private stakeholders have to face?

- How can a transition towards a new balance, in the governance of flood risk management, be made according to the stakeholders?

1.5 Readers guide

Chapter two explains the theoretical basis for this research. The results of current literature and some new linkages result in the conceptual model at the end of the chapter. The conceptual model

shows the relationships between the different concepts of this research. In the methodology, chapter three, is explained how the data collection method has been carried out, how the data are analysed, which ethical considerations have been taken into account and the quality of the data is also discussed in this part. In chapter 4, the results are discussed in the context of existing theories. The last chapter gives a conclusion, wherein the main points of the study are outlined and wherein an answer on the main question is given. Furthermore it discusses the strengths and weaknesses of the study and it gives recommendations for a possible follow-up study.

2. Theoretical framework

In this chapter the results of the literature study are set out. To get to know how a transition in flood risk management from the current situation towards good governance can be made by different stakeholders, it is important to know how stakeholders work together, which challenges they face and which role citizens have in a transition towards good governance. Good governance is about how governments, social organizations and citizens interact and how decisions are taken and whom they involve in the decision-making process (Graham et al., 2003).

In section 2.1 the stakeholder theory is used to make the different actors visible. In section 2.2 the governance challenges stakeholders face are set out and in section 2.3 the role of citizens gets a closer look. In the end the conceptual model interlinks the different concepts. The model also helps to make expectations of the results of this research.

2.1. State of the art of the public and private stakeholder roles

In the literature the definition of stakeholder differs. Fleischhauer et al. (2012) mention that in scientific projects the term stakeholders is often used for non-institutionalised interest groups and for representatives of the institutionalised public. Whereas other organisations such as the World Bank (1994, p. 3) have a broader definition: “a stakeholder is everybody that is affected or interested by a project/activity”. Freeman (1984, p. 46) defines it as “any group or individual who can affect or is affected by the achievement of the organisation’s objectives”. In the context of ‘het Zuidelijk Westerkwartier’ the definition of Freeman (1984) will be used, because different organisations are involved and they affect and can be affected by any group or individual. In appendix A, the different actors are shown in an organogram including their roles and how they are organised within the project.

With the definition of a stakeholder in mind, the stakeholder theory will be explained. The stakeholder theory of Freeman (1984) argues that there are more parties involved in a company than just the owners or shareholders of the company. There are among others employees, suppliers, customers, financiers, political groups and trade unions. Stakeholder theory can also be used in other fields than just business, for example in social responsibility methods as is the case in this thesis. The stakeholder theory has an instrumental aspect (Donaldson & Preston, 1995) whereby data are used to identify the connections that exist between the different stakeholders and the achievement of their corporate goals. In figure 2 (after Freeman, 1984) the connections between the involved stakeholders and ‘het Zuidelijk Westerkwartier’ are given.



Figure 2 Visualisation of stakeholders in ‘het Zuidelijk Westerkwartier’ (after Freeman, 1984)

These stakeholders not just have a relationship with the project, but also have relationships between each other. These are the so called PPPs: Public Private Partnerships. According to Demirag & Burke (2013, in Demirag & Burke, 2016) there are three stakeholder relationships: public-public relationships, these are the relationships between public sector bodies; public-private partnerships, these are the relationships between public and private organisations; and club relationships, these are the relationships between stakeholders in a formed group of stakeholders to share benefits, information and resources (Smith et al., 2006, in Demirag & Burke, 2016). In this study the focus is on the first two relationships, because this study looks into the relationships between the various public and private stakeholders and does not focus on the internal organization of those stakeholders. To contribute to the quality of these three kinds of PPPs, some factors are important, amongst others: trust, flexibility, goodwill, collaboration. In the conceptual model these factors are taken into account.

For risk governance these PPPs and their quality are important as well, because risk governance is a process by which risk information is collected, analysed and communicated by different stakeholders. On this basis, management decisions are taken (Fleischhauer et al., 2012). Therefore it is important to monitor these relationships in order to get the best results in resilience. Resilience is determined “by the degree to which the social system is capable of organizing itself to increase its capacity for learning from past disasters from better future protection and to improve risk reduction measures” (UNISDR, 2004, in Fleischhauer et al., 2012). To know how capable the current system is of organising itself, it is analysed in the next section ‘challenges in the current governance system’.

2.2 Challenges in the current governance system

After having a look in section 2.1 at the different stakeholders and their linkages to ‘het Zuidelijk Westerkwartier’ and their linkages between each other, the quality of linkages are more researched in this section. The quality of linkages is associated with challenges in the current governance system as well. In this section these challenges are set out.

One of the key issues in decision-making in governance, is the quality of the data it is based on (Milly et al., 2008 in Fleischhauer et al., 2012). But because of climate change it becomes rather difficult to use past data to extrapolate situations for the future, the situation in the future will be different. For example to predict the amount of precipitation for the future. Due to these new “uncertain” risks (Milly et al., 2008 in Fleischhauer et al., 2012), like the future amount of precipitation, science cannot

give a proof of risk and therefore cannot come with certainties. That makes it rather difficult to make decisions, therefore it is even more important that different stakeholders agree on response actions.

To agree on response actions, stakeholders have to work together. But in risk governance this is not always the case. Problems are found in PPPs and two dimensions have to be considered:

- Problems between different institutions; the ‘vertical-horizontal’ problem (Green, 2017) or interplay problem (Young, 2002)
- Problems between institutions and stakeholders (Lofstedt, 2005 in Fleischhauer et al., 2012)

2.2.1 Problems between different institutions

The problem of interplay between different institutions can be seen from two perspectives: a horizontal and a vertical one. The horizontal one refers to the same level of social organization, whereas vertical interplay appears between different levels of social organization: international, national, local levels (Vatn & Vedeld, 2012). The problem in horizontal interplay is that different actors work in the same project, but with opposite interests, consequently actors weaken each other’s plans. The core of the vertical interplay is to know how well the different responsibilities are distributed along the different levels of organization. A lack of interplay among the different institutions is a major reason for failure in risk management and makes it hard to come to common measures (Young, 2002).

2.2.2 Problems between institutions and stakeholders

This problem focuses more on participation and knowledge-sharing between the different actors. In risk governance concepts the involvement of all social groups is regarded as crucial (Fleischhauer et al., 2002). This is considered as crucial because it helps to implement decisions effectively. However, it is not easy to get all the stakeholders (including lay persons) into a dialogue about risk management.

In the article of Fleischhauer et al. (2012) problems concerned by individual citizens are mentioned as well. For example distrust in authorities, lack of transparency of the processes, difficulties in understanding and lack of influence on decision-making. In the next section the role of individual citizens in participation gets a closer look.

In the case of ‘het Zuidelijk Westerkwartier’ the problems mentioned above might be noticed as well, therefore it is important to know how these challenges can be faced in the future and how this transition towards good governance can be made. Therefore the role of citizens in flood risk management should get a look as well.

2.3 The role of citizens in flood risk management

Citizens have legally defined participation in flood risk management processes, for example by making a point of view (zienswijze) in a structural concept (structuurvisie) (Rijksoverheid, n.d.). This participation is called ‘formal participation’, but can be extended by ‘informal participation’. Informal participation is on a voluntary basis and can be seen as a support to formal participation. It helps to improve the management process and it also leads to more acceptance towards the measures taken (Le Pira et al., 2016).

In 'het Zuidelijk Westerkwartier' both formal and informal participation are used. Citizens can make a point of view, but are also involved in 'round tables', 'sketch sessions' wherein they have the possibility to share their ideas (Prolander, 2016). Furthermore, some citizens organised themselves in interest advocacy organisations and participate on voluntary basis in the project.

The intensity of participation can vary within flood risk management processes. There can be no participation at all, as visualised in step 1 on Arnstein's (1969) Ladder of Participation, whereas the other extreme, citizens control, can be found on the other end in step 8. In figure 3 Arnstein's Ladder of Participation is given and complemented with the intensity degrees of participation processes by Arbter et al. (2005, p.9 in Fleischhauer et al., 2012). More intense participation, by round table working group mediation for example, does not automatically mean that the result of a plan will be better. The complexity of the case has to be taken into account according to Murray et al. (2009). In complex cases, with different stakeholders and interests a bottom-up approach (higher on Arnstein's Ladder) is needed. Whereas in simple cases a lot of input from different stakeholders can be obstructive. In simple cases solutions can be simply found, a lot of input is not necessary in such cases.

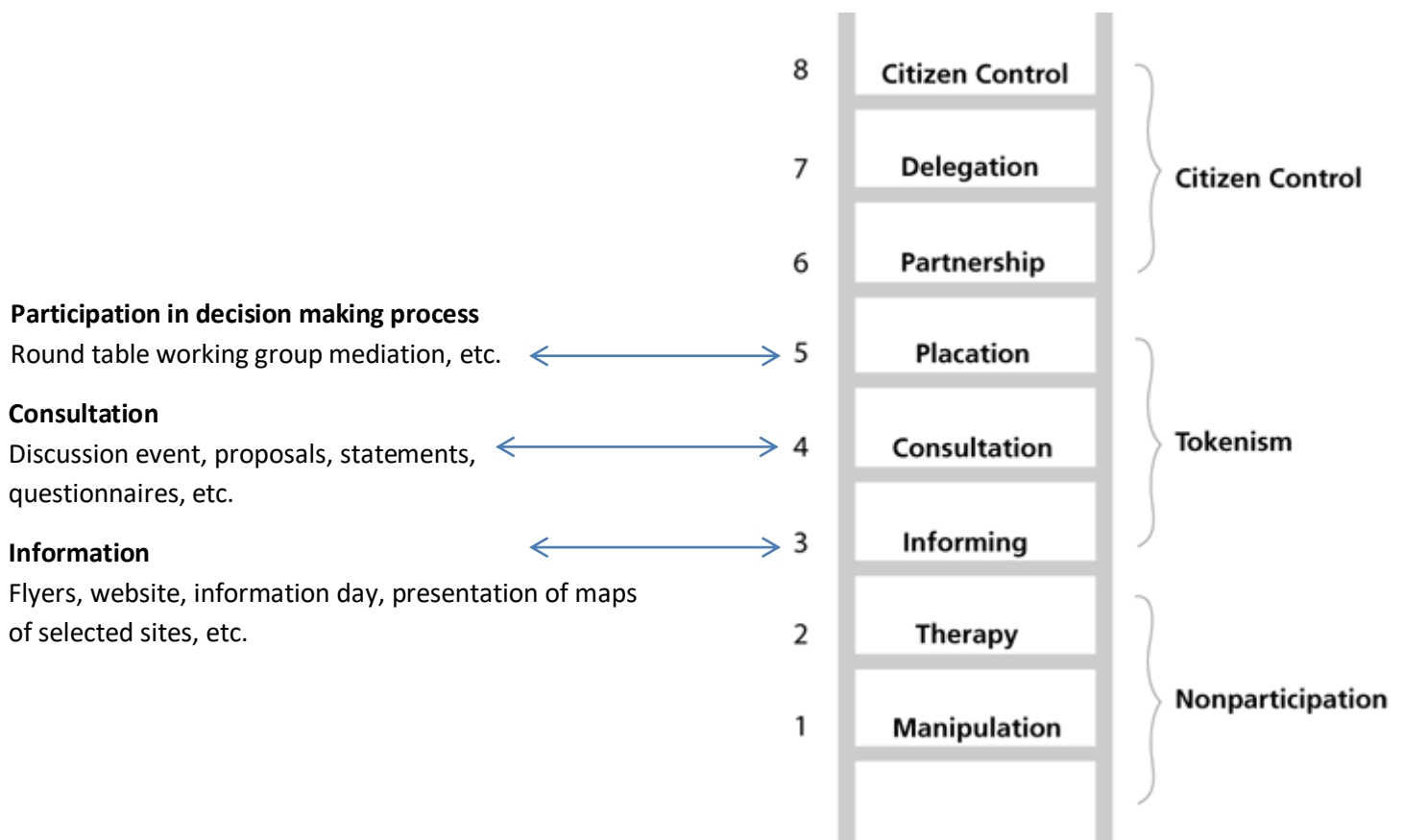


Figure 3 Arnstein's Ladder of Participation (1969) complemented with the intensity degrees of participation processes (after Arbter et al., 2005, p.9 in Fleischhauer et al., 2012)

The degree of participation is also depended on the risk perception of people. As mentioned earlier, people who live in areas at risk systematically underestimate the likelihood of natural disasters (Palm et al., 1990 in Schwarze & Wagner, 2007; Plapp & Werner, 2006). But if people have an experience with a certain risk, they are more likely to take preventive measures (Fleischhauer et al., 2012). Their

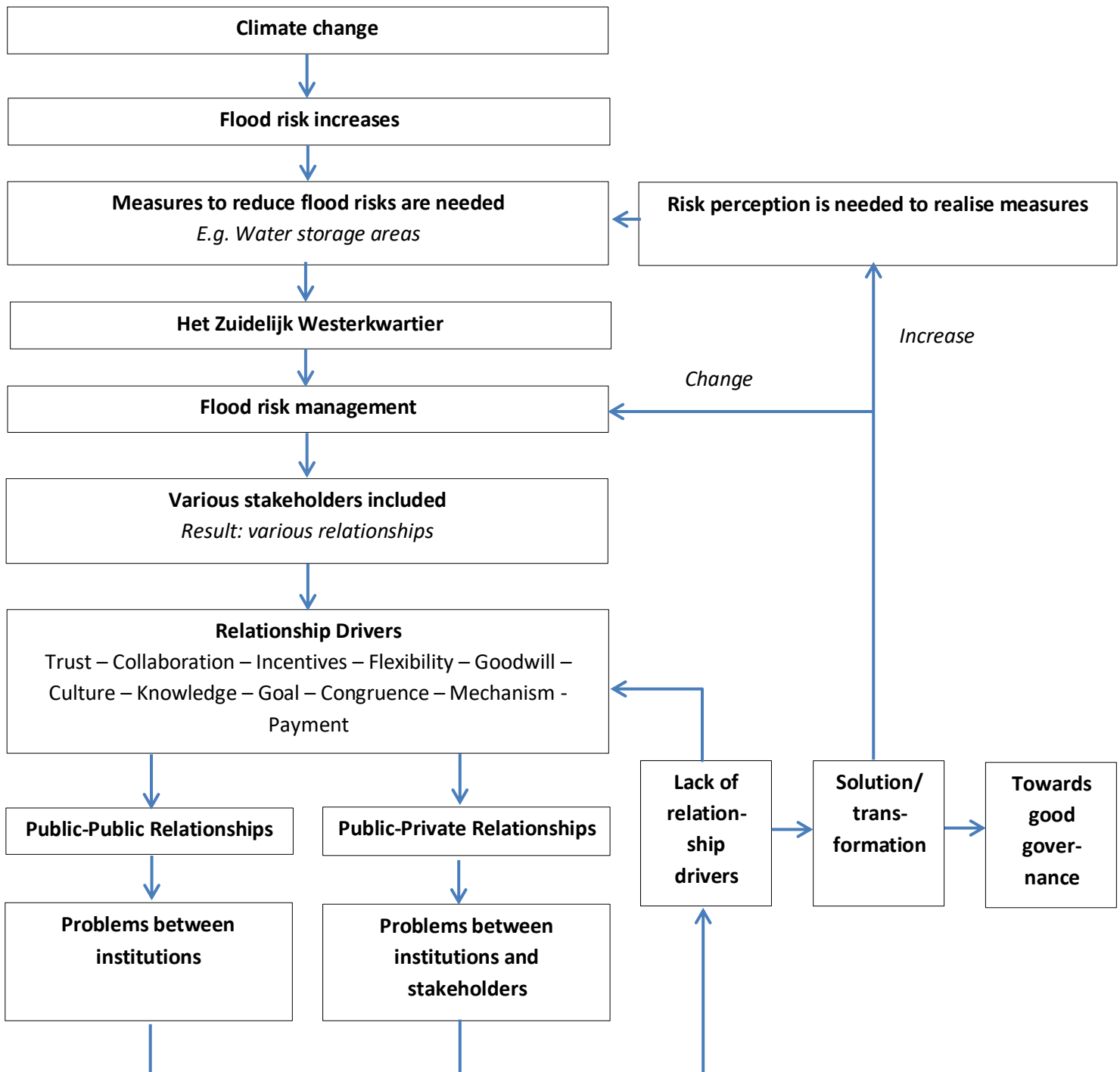
risk perception might also be high even without this experience, due to information they received concerning possible risks due to climate change for example (Fleischhauer et al., 2012). Also the role of the media has to be mentioned, especially during and shortly after a flood event the media reports about it, but awareness of the risks is fading rapidly if there is no recollection by them or by public institutions (Wright, 2017).

To increase the awareness of flood risks among citizens, there is more needed than precise knowledge about risks. The awareness is also related with values, attitudes or opportunities for protection (Fleischhauer et al., 2012). Therefore it is important to facilitate these opportunities, this can be done on different levels. In schools projects can be embedded in the curriculum and welcome-packages can be send to the households with information about risks in their living environment. Furthermore people shall be reminded of past events as making a flood visible also contributes to rising awareness. This has been done by the artist Daan Roosegaarde for example, he visualized the water level on the Museum Square in Amsterdam by making use of lights (Het Parool, 2015). Figure 4 shows the art of artist Daan Roosegaarde.



Figure 4 Visualisation of the water level on the Museum Square in Amsterdam by making use of lights, work of artist Daan Roosegaarde. (Picture taken by Biebkriebels, 2015).

2.4 Conceptual model



This conceptual models visualizes the linkages between climate change, increasing flood risk and the governance aspects which include flood risk management, relationship drivers, relationships and corresponding problems. These problems show that there is a lack of relationship drivers in existing relationships. Therefore it is necessary to find a solution to re-establish the relationship drivers in relationships. By doing so, a transformation towards good governance can be made. In order to reach a transformation, changes should be made in risk perception and in flood risk management.

The next chapter will discuss the research methods which have been used in this research.

3. Methodology

In this chapter the methodology is explained. It shows which research methods are used and the reasons behind it. It also elaborates on the limitations and benefits these methods give. Additionally this chapter explains some of the choices made during the research, such as the participant selection and the reflection on the acquired data. At last it discusses the ethical considerations.

3.1 Methods of data collection

The aim of this research is to come to new insights in the governance of flood risk management, therefore the case 'het Zuidelijk Westerkwartier' is researched in this thesis. To know which actors are engaged and which role they play in the field, a literature study is done (see chapter 2 'theoretical framework'). The roles the main actors play and how these roles are interlinked can be seen in the organogram (appendix A). Not just a literature study is done (chapter 2), also policy documents are used and in-depth interviews are held. Therefore this research characterizes itself by triangulation.

Various policy documents are used, such as Kader Richtlijn Water (KRW), Grond Strategie Plan (GSP) and Nationaal Bestuursakkoord Water (NBW). These policy documents are used in this report because they contain the motives behind the implementation of nature structures and water storage areas in the project ZWK. In the next chapter 'results' more about these policy documents.

In-depth interviews are held with the different stakeholders. By making use of this qualitative research method, the motives behind concepts and decisions can be figured out. A quantitative method is useful for gathering information about people's characteristics or behaviour, but not for the motives behind this behaviour (Clifford et al., 2010, p.87). Especially in the case of 'het Zuidelijk Westerkwartier' the motives behind are important, therefore quantitative methods are not used in this research.

The interviews are one-to-one interviews, so the interviewer can build a high degree of trust and thus improving the quality of the data (Berent, 1966 in Stokes, 2006). To get most out of the interview, some questions were asked, but there was enough time left for own input and information from the interviewee. This new input in the conversation lead to new questions from the interviewer. This helped to get a better understanding of the linkages between the different actors in 'het Zuidelijk Westerkwartier' and to get to know which problems there are. By discussing these problems with the stakeholders ideas for a possible transition in governance can be discussed. The situation has to be comfortable so that there is interaction between the interviewee and the interviewer. Furthermore the interviewee gets to talk freely and can express his/her detailed beliefs and feelings on a topic (Webb, 1995 p.121 in Stokes, 2006).

A criticism of using in-depth interviews for gathering data is that it miss out on the advantages of interactions with others (Stokes, 2006). But especially in the case of 'het Zuidelijk Westerkwartier' it is important to ask the different actors separately, so that they can speak out freely. Another criticism could be that some actors do not give all the information, because of the interests they have or because they do not want to blame the organisations they work for or with. Therefore it is important to mention that the interviews were taken anonymously, this was also stated in the consent form (appendix C).

3.2 Participants

Eight interviews, with ten interviewees, were held with various stakeholders: Prolander, Province of Groningen, LTO Noord, Staatsbosbeheer, Water Board Noorderzijlvest, Municipality of Marum, Entrepreneurs Association Tourism Westerkwartier (Ondernemersvereniging Toerisme Westerkwartier) and interest advocacy organisation Polder de Dijken (Belangenvereniging Polder de Dijken (BVPDD)).

Most of these stakeholders are involved in the area committee, the area committee is the committee where the decisions about 'het Zuidelijk Westerkwartier' are taken (appendix A). Therefore this committee is important in governance and therefore the actors of this committee have been interviewed. As already mentioned, most of these stakeholders are involved in the area committee, however interest advocacy organisation Polder de Dijken has been interviewed although not involved in the area committee. BVPDD does not have a seat in the area committee because formally citizens are represented by their municipality in this committee. However, by organising themselves in an interest advocacy organisation they have influence in the process and in the governance of the project, therefore they have been interviewed as well.

Within the project ZWK there are various subareas, three of those subareas will be used for water storage; Dwarsdiep, de Dijken, Driepolders (figure 1). These three subareas are located in the Province of Groningen and mostly in the municipality of Marum, therefore these stakeholders are approached. That also clarifies why Water Board Fryslân and the municipalities of Grootegast and Leek were not approached. The participants were approached by email.

The interviews were held in April 2017 at the offices of the stakeholders, by people at home or at the university. To make the interviewees more convenient, the interviews were held in Dutch. During the interviews questions about the sub questions were asked, for the interview guide see appendix D. The interviews were recorded with permission from the interviewees and were transcribed afterwards. After transcribing the interviews, they were encoded. Encoding gives more structure to the data and helps to get concrete results.

3.3 Analysis

After transcribing the interviews (appendix E), the analysis of the gathered data is done by making use of so called 'open coding', this is unrestricted coding of the data, whereby the data are looked very closely and the aim is to produce concepts that fit the data (Strauss, 1987 in Clifford et al., 2010). That resulted in the codes that can be seen in table 1 'codes after using open coding'. Every code responds with a color. The color is used to mark the text, that belongs to that specific code, in the transcripts.

Purple	Current policies/ reasons to start project ZWK
Yellow	Role of the actors
Green	Current challenges in governance
Blue	Things that went well in the process/ custom-work
Red	Internal challenges within organisations
Brown	Towards a transition/ recommendations for the future
Black	Interesting sentences/ quotes/ citations

Table 1 'Codes after using open coding' by author

To answer the first sub question *'How do public and private stakeholders look upon their current roles in the field of flood risk management in 'het Zuidelijk Westerkwartier'?'*, the input from the interviews is used and also policy documents are used such as the strategic plan for the area (Grond Strategie Plan (GSP)).

For the second sub question *'Which governance challenges do public and private stakeholders have to face?'*, a literature study is done (chapter 2) to get an answer. Furthermore is the input from the interviews important as well. By asking the different actors which challenges they face, reasons for a transition in governance are given.

The third sub question focuses on a possible transition *'How can a transition towards a new balance, in the governance of flood risk management, be made according to the stakeholders?'*. To answer this sub question the input from the interviewees is necessary.

The results and answers to the sub questions are written down in the next chapter 'results'. The different data collection instruments are combined in the conclusion to give an answer on the main question.

3.4 Reflection on the data

One of the concerns about the gathered data is that it could be that some actors do not give all the information, because of the interests they have or because they do not want to blame the organisations they work for or with. Even though they knew their participation was anonymously. Another point is that some actors suggested certain beliefs, but did not want to confirm those. A problem with the transcripts is that you cannot find those emotions and suggestions and therefore cannot really use them in the results.

3.5 Ethical considerations

Ethical considerations have to be taken into account, especially when you work with people. It is important to do research in an ethical way and thereby protect involved people and places. By doing so, they are more likely to participate in further research and that guarantees that valuable work in the future can be done (Clifford et al., 2010). In this research ethical considerations mainly relate to the interviews.

The interviewees are guaranteed that their participation in this research is confidential. To make them aware of their rights, a consent form is signed (appendix C). The interviewees remained completely anonymous and volunteered to cooperate in the research. Also, the need and purpose of the research is clearly presented to the participants in the introductory text. Therefore the participants were informed consciously before deciding to participate in the research. During the research it was still possible for them to stop, to stop recording or not to answer certain questions, without giving a reason. The transcripts have been sent to them, if they wished, to check if everything was all right.

4. Results

In this chapter the results of the primary data collection (interviews), combined with the secondary data collection (policy documents and literature) are set out. Every sub question is answered in this chapter and that leads to an answer on the main question in the next chapter 'conclusion, reflection and future research'. By doing so it makes clear how a transition in flood risk management towards good governance by public and private stakeholders in 'het Zuidelijk Westerkwartier' can be made. The transcripts of the interviews can be found in appendix E.

4.1 Current roles of the stakeholders

The first sub question takes into account how stakeholders in 'het Zuidelijk Westerkwartier' look upon their current roles. It is important to figure out how they look upon themselves in the planning process; is their current role sufficient to realise their goals? The first sub question takes the roles into account: *'How do public and private stakeholders look upon their current roles in the field of flood risk management in 'het Zuidelijk Westerkwartier'?'*

The current roles of the stakeholders are diverse; some stakeholders represent the interests of their followers, other stakeholders are responsible for policy ambitions, and others again represent their own interests. As can be seen in appendix B, the Province of Groningen and Water Board Noorderzijlvest are the clients of the project ZWK. They have to make the decision in the end on how to plan the water storage areas and the nature reserves. Both the Province and the Water Board have policy measures to realise. The Province of Groningen is responsible for +/- 2800 hectare of nature in this area, this results from European policies such as Natura 2000, nitrogen approach programme (Programma Aanpak Stikstof (PAS)) and Nature Network Netherlands (NNN) which is a component of Pan-European Ecological Network (PEEN) (Het Zuidelijk Westerkwartier, 2015). Noorderzijlvest is responsible for the storage of 2,7 million cubic metres of water, this results from the policy 'Dry Feet 2050' (Droge Voeten 2050) (interview 3).

The clients outsourced the project to Prolander. Prolander is an implementing organisation of the Provinces Groningen and Drenthe. Prolander fulfils the tasks concerning the NNN (interview 5). In the project ZWK their role is to manage the whole process, which leads to the fulfilment of the policy assignments of the clients. As can be seen in the organogram (appendix B) the secretary of Prolander is involved in the area committee, the project group and in the work group. Being so involved helps to get the best out of the project, the secretary is the binding factor in the project (interview 5). Prolander is also the contact for land acquisition. The largest landowners of the project area are Staatsbosbeheer, the Province of Groningen and farmers. The farmers own around 1800 hectares which the Province still needs to buy. More about this land acquisition in the next session 'governance challenges'. The farmers who are members of LTO are represented by LTO Noord in the area committee. The role of LTO Noord is to make sure that there are enough tools and good conditions for the farmers to negotiate. Examples of those tools are business relocation and lot exchange (interview 6). The municipality of Marum is also a party that is involved in the project ZWK. During the interviews different roles of the municipality were stated by the interviewees. Some of the interviewees stated that the municipality represents its inhabitants (interview 1, 5, 8). One of the interviewees especially mentioned that the municipality represents all its inhabitants, farmers included (interview 6). However, the interviewee of the municipality mentioned that the municipality does not represent people, but the process. According to the interviewee, the municipality

supervises the process and guarantees that citizens can participate in the project. They control the process and ensure that pre-arranged rules will be followed (interview 7).

Another actor is Staatsbosbeheer, they manage a big part of the area and they would like to see more biodiversity in the area. Furthermore they have close contact with the inhabitants of the area, also because some inhabitants lease plots of Staatsbosbeheer. Staatsbosbeheer is an important factor in lot exchange as well, because they own land which can be exchanged with farmers (interview 2). The entrepreneurs focused on tourism are organised in an association in 'het Zuidelijk Westerkwartier'. In the planning process of ZWK recreation and tourism are taken into account as well, to attract people to the area. The entrepreneur's association tourism sees new possibilities in the area (interview 1). When such a big project is going on, some small ideas as cycling paths, walking routes and horse routes might be realised as well. They are involved in the project to make those realisations come true and to think about the combination of various plans (meekoppelkansen). Some inhabitants organised themselves in an interest advocacy organisation, one of those organisations is Polder de Dijken (BVPDD). Their role is to participate in the process, because it is about their direct living environment. They want to influence the process and make sure that they can live in a convenient way now and in the future (interview 4).

All the actors have in common that their role in the process is sometimes difficult, because their interests can be the opposites of others. BVPDD would like to see a different a role for themselves, they would like to have a seat in the area committee to be more influential (interview 4). The other actors are satisfied about their current roles, but also see points to improve to make sure that they remain the same possibilities in the future. Water Board Noorderzijlvest for example would like to make people more aware of what they are doing and why that is so important (interview 3). This might also result in more attendance during the Water Board elections. The actors also mention that their roles in the process ask for patience. One of the interviewees said it as follows: 'planning processes consists of talking, endless talking, and listening to the inhabitants of the region' (interview 3). In the next session more of these challenges are discussed.

4.2 Governance challenges

In chapter 2, two different kinds of problems are mentioned: problems between different institutions; the 'vertical-horizontal' problem (Green, 2017) or interplay problem (Young, 2002) and problems between institutions and stakeholders (Lofstedt, 2005 in Fleischhauer et al., 2012). In this section this distinction is made as well. This results in the answer on the second sub question '*Which governance challenges do public and private stakeholders have to face?*'.

4.2.1 Challenges between different institutions

In the project ZWK some horizontal and vertical challenges are faced. Horizontal challenges characterizes themselves by the same level of social organisation, but with opposite interests. In the project ZWK some of these horizontal challenges are found.

The first horizontal challenge has to do with the requirements both clients have to fulfil. The Province of Groningen and Water Board Noorderzijlvest both have different policy measures to realise as is explained in section 4.1. Due to the fact that they are both client of the project, they had to come with a common plan for Prolander. The interviewees of the Province, Water Board Noorderzijlvest as well as the interviewee of Prolander explained that it is very important to define clearly what the common plan is before you start a project. This might be a challenge in the beginning, because

opposite interests have to be combined, but it helps to manage the project in further phases (interview 3, 5, 8).

Another horizontal challenge is that the clients, Water Board Noorderzijlvest and the Province of Groningen, initially have to realise the project on a voluntarily basis by the different stakeholders. The clients need to have support from the area to fulfil their plans. Because of the different interests among the stakeholders it is a difficult task to get their support in the plans. The municipalities control this process and make sure that all the actors can act voluntarily (interview 7). It is not just important that actors can act on a voluntarily basis, it is also important that they have the same approach on how to reach quality standards. Therefore they have to learn from each other. The Water Board has an ecologist who discusses the quality of the water with the hydrologist of Staatsbosbeheer; interaction and communication between the different organizations is necessary to come to common measures (interview 2). But this is not always easy, because the approaches within the various organizations regarding spatial planning can differ. Integral thinking and combining different sectors does not happen in every organization (interview 2). That might lead to frustrations between the different institutions. Furthermore, it happens that the organizations do not exactly know what the others are doing and thereby do not know how they can work together and how to complement each other. These are missed opportunities.

Vertical challenges, which include the distribution of the different responsibilities along the different levels of organization, are also found. One of the key challenges is to make a distinction between the interests of the individual land owner and the broader interest of a collective such as inhabitants of a city. The individual land owner needs to live from his business and needs his plots to do his job. On the other hand that same plot is needed for water storage to make sure that a city will not flood. As a consequence two different interests on two different levels have to be combined, that may result in friction in the process. Furthermore, people have different opinions about the importance of both interests. One of the interviewees said 'there are some big [farmers] and they are demolishing the landscape, we have to say that. Those beautiful wooded banks that everyone cherishes...' (interview 2). Thus among the stakeholders there are different opinions about it.

A vertical challenge about the distribution of policies is mentioned as well. Many policies are designed by the EU or the national government and have to be implemented in 'het Zuidelijk Westerkwartier'. It can be hard to implement those top-down policies, because they can be in conflict with bottom-up ideas and practices. For example the amount of nature that has to be realised according to those policies can be in conflict with the amount that is realistic in the area. Therefore flexibility in the processes is needed (interview 5, 8). This flexibility has to be found in politics. One of the interviewees (6) mentioned that 'it is for politicians easier to explain that 10% will not be reached, but at least 90% will be reached within ten years, instead of realising 100% and not finishing the project within 50 years'. By creating this flexibility top-down policy might not be completely fulfilled. This is a challenge that actors might face, in the next section challenges between institutions and stakeholders are discussed.

4.2.2 Challenges between institutions and stakeholders

Challenges between institutions and stakeholders focus more on participation and knowledge-sharing between the different actors. In the project ZWK some challenges regarding participation and knowledge-sharing are found. One of the challenges regarding knowledge-sharing goes around 30

years back. Back then there were already plans to transform certain areas into nature, but there was no time pressure (interview 2). In the meanwhile people expand their farms and built houses. Besides the nature goals, plans regarding water storage came up around the year 2000. Again there was no time pressure and water storage areas were not realised (interview 3, 4). People start building new houses and were not informed about possible plans for the future. Then ten years later the project ZWK started and many people were caught off guard, because they did not know that they built their house in a future water storage area (interview 4). They were not informed by any governmental organisation and did not look upon information themselves either. The lack of information in those years resulted among others in distrust in authorities by inhabitants of the area (interview 1, 2, 6). Governmental organisations cannot tell what could be realised in the future in a certain area and where to build or not to build. However, it would be helpful if they came up with guidelines about how high to build your house compared to the water level (interview 4). More about how a transition can be made can be found in the next section 'transition towards a new balance'.

Another form of distrust is that some inhabitants deny climate change and do not see the need to create water storage areas. They simply think that floods will not occur. That makes it rather difficult for organisations, like Water Board Noorderzijvest, to explain why a water storage area might be built in their backyard (interview 3). In the information sessions it is important to create trust and to show people that climate is changing. A method to create trust is by letting someone speak who is positive about the project. If the first speaker is extremely negative, it is difficult to end the negative atmosphere and the process can stuck on such a moment (interview 1). Another way to create trust is to be realistic about the project, and to be realistic about certain plans. For example by showing how high a dike will become by making use of pictures helps a lot to prevent people from misunderstandings. Imagery is really important in planning processes, because lay persons do not always have the right idea about certain plans, in addition to that, some people do not know how to read a map, therefore it is even more important to show your plans by imagery (interview 5). Understandable communication, without professional jargon, is necessary to involve lay persons. In communicating with citizens, emotions also have to be taken into account (interview 6). For example in sketch sessions, people are sketching on others plots, which might feel offensive to the land owner who still owns the land. Some plots are in families for decades, and owners feel connected with those plots, that should be taken into account by plan- and policymakers. Furthermore, for some people the plans of storing water on land sound ridiculous, it feels like going back in time. After the Second World War, the area of 'het Zuidelijk Westerkwartier' had to be productive, to make sure that there was enough food. The water should drain to the sea, instead of keeping it on the land. From that perspective, some people still feel shocked by introducing these plans of water storage (interview 2). Therefore it is important not to rush the process, people have to get used to this new way of thinking. However, time pressure was a challenge that all the stakeholders mentioned in the interviews. Especially the time pressure for deadlines such as finishing the water storage areas in 2020 are really felt by the stakeholders. On the one hand these deadlines are good to get things done, on the other hand it can also frustrate the process because people feel rushed up (interview 1).

As mentioned earlier, there are some challenges regarding land acquisition. Especially in one of the water storage areas: het Dwarsdiep. In this sub area most land is still owned by farmers. During the process it came out that it is difficult to get that land for water storage. One of the main reasons why

it is so difficult to get the land is due to the organisation of the process (interview 6). Farmers are used to make decisions very quickly and to buy and sell land within a couple of days. However, in complex processes wherein many stakeholders are involved, processes take longer (De Roo & Voogd, 2013). In complex cases it takes more time to come up with a setup plan (inrichtingsplan) and to buy and sell land. These two approaches – acting quick versus acting slowly – result in lack of understanding and problems between stakeholders and institutions. Furthermore, the current approach is focused on getting support among farmers for the design of the water storage areas (interview 6). The interviewee (6) mentioned ‘they try to get support in the area and that is the right way to go for inhabitants and residents. But people you need the land of, you do not need to get their support, you just have to do business with them’. That means that institutions like Prolander should shift their focus towards more custom-work. More about a possible transition towards a new balance in the next section.

4.3 Transition towards a new balance

In this section the third sub question is answered ‘*How can a transition towards a new balance, in the governance of flood risk management, be made according to the stakeholders?*’. In a new balance the role of citizens might be different; they might have a larger role in flood risk management in the future. Furthermore the emphasis is on components of the process in the project ZWK that went well and these components should be taken into account in future projects.

The first aspect that went well was the fact that the actors in the area committee were satisfied about their influence and participation in the committee. As one of them mentioned ‘everyone has a full voice, nobody sits there for show’ (interview 1). Another point is that involvement from the beginning is highly important to know all the ins and outs of the project (interview 4).

Positive examples contribute to support of plans. In the case of ‘het Zuidelijk Westerkwartier’ the example of the Marumer Lage is shown. This water storage area is a positive example and shows that nature, water and recreation can go together. There are a lot of birds in this area, and last winter people had the possibility to ice-skate on this Lage. That makes them proud of their area and helps to realise new plans of equal scope (interview 2).

In order to make sure that measures to reduce flood risk in the future can be taken, it is necessary to increase the risk perception of people (interview 3). Some people in the area ZWK are not even aware of the fact that they live in a polder (interview 4). Others are denying climate change (interview 1, 4). It is and will be very difficult to realise plans if people do not see the need to realise them. By increasing flood risk awareness now, future projects will be easier to realise (interview 3). Therefore it is worthwhile to invest in campaigns, to visit schools, to remind people of past events and to invest in other measures to increase awareness. By doing so, a transition towards a new situation is possible.

Current changes also give new opportunities. One of those opportunities lies in the dairy and stock breeding industry. EU policy about the acceptable amount of phosphate changed a lot in the industry. That resulted in a massive registration in the area ZWK for the buy-out regulation (interview 2). In a new balance, current changes have to be taken into account. If many farmers stop farming, a surplus in farms and land can arise, that can give new opportunities in realising water storage areas (interview 6).

Another point to make a transition possible is to extend the bottom-up approach. In 'het Zuidelijk Westerkwartier' this approach is already used, but it can be extended. It also costs time to get used to this new way of thinking (interview 2, 4). It can also be that an organisation is already working regarding this principle, but other organisations are not aware of it. An example is the municipality of Marum, the municipality works with the principle of municipal participation instead of citizen participation. According to the interviewee (7) this means that the municipality participates in projects of citizens instead of citizens participating in projects of the municipality. This is a bottom-up approach that might be interesting for other organisations as well. Therefore it is important that other organisations know how this approach works and that they know from each other that they work regarding this principle. Communicating and working integral are thereby essential

One of the bottom-up approaches was the organisation of citizens in an interest advocacy organisation. For implementing organisations like Prolander it becomes clear what the advocacy organisation wants if they come up with certain conditions. Furthermore, an organisation like BVPDD is an easy way to get in touch with the inhabitants of the area and to keep them up-to-date (interview 4, 5). Being organised in an advocacy organisation might be helpful in other regions and water storage projects as well.

In order to build in a resilient way, it would be good if certain guidelines about how high to build your house compared to the water level would be introduced (interview 4). To make a transition towards a new balance, such guidelines should be taken into account by governmental organisations (interview 4). Especially when zoning plans for water storage areas are not there, it would be good if in the meanwhile people build their houses a bit higher. That can help to prevent high costs for drainage afterwards, and it can help to create less distrust in authorities by citizens.

5. Conclusion, reflection and future research

In the following chapter an answer to the main question is given. Furthermore a reflection takes place, as to which parts of the research could have been better and what the limitations of this research are. Finally, recommendations for a possible follow-up study are given.

5.1 Conclusion

In this section an answer is given to the main question: *How can the transition, in flood risk management, towards good governance by public and private stakeholders in 'het Zuidelijk Westerkwartier' be made?*

In 'het Zuidelijk Westerkwartier' many actors are involved and they are organised in different committees and groups (Appendix A, B). The way the different actors are structured and the current roles they fulfil in realising water storage projects, works. Especially the short linkages to Prolander helps to get the best out of the project. A critical point on the current roles, is about the role of the inhabitants. Some of the inhabitants organised themselves in an interest advocacy organisation, that is helpful in the communication with them, but also helps them to get things done within the project. However, their interest organisation is not involved in the area committee, but they can give input through participation. That makes this group vulnerable. They are depended on the willingness of their municipality to get answers on their questions. In order to reach a more bottom-up approach in the future, a transition in the role of inhabitants should take place.

Another point regarding citizens is their risk perception. To make sure that water storage projects in the future can take place, the flood risk awareness among citizens has to increase. If people are aware of certain risks, they are more likely to take preventive measures (Fleischhauer et al., 2012). If they are more aware, they are more likely to participate in future projects and therefore they will reach a higher stage on Arnstein's Ladder (1969). This will contribute to a more bottom-up approach in flood risk management.

What also is important in good governance is the interaction and communication between the different actors. It is important that they know what the other parties involved are doing and how they work. Custom-work is essential in this case as well, especially in getting the land. The approach of farmers in planning processes can be totally different from governmental organisations, but in order to work together they have to know how the other party operates, a mutual learning process is necessary. By doing so, they can learn from each other and can better work together towards a result. This might lead to combination of various plans (meekoppelkansen). Not just the communication between the different actors is important, also the communication between the plan and the actors is important. Therefore imagery can help to visualize certain ideas and that helps to make sure that everyone has the same ideas about certain plans.

To make sure that time pressure will not rush up the process, flexibility and a realistic time planning are necessary. Furthermore, the goal of the project should be clearly formulated by the clients from the beginning.

A transition in flood risk management towards good governance can be made if all the actors are well-willing to learn from each other and if they stimulate bottom-up processes. Furthermore, the different actors should help improve increasing the flood risk awareness among citizens to make sure that water storage projects can be developed in the future as well.

5.2 Reflection

As with any research, there is always room for improvement. For example, that more interviews could have been held. Eight interviews with ten people gave a lot of information, nevertheless the input from farmer & nature is not included in this research. Farmer & nature is a member of the area committee and therefore involved in the governance of the project ZWK. Unfortunately it was not possible to reach them and therefore their input is not taken into account. Recently, other citizens in another sub area of the project also started an interest advocacy organisation. They have not been interviewed either due to time constraints of the researcher.

Another critical note on this research is that the process started earlier than the research. Therefore the researcher did not exactly know what happened in the beginning of the process. Of course there are documents to read, but being actively involved will give much more information. Not being involved from the beginning of the process also has other constraints, one of them is that actors are not going to tell you everything. Especially if you ask about the process they will not tell you all the exact problems or challenges they had with other parties involved. Furthermore, this research is based on stakeholders reflection of the process, in case the researcher was involved earlier, the data could have been combined with own observations of the process by the researcher.

Another more practical problem was due to the fact that the researcher improved her research skills during the research, therefore the first interviews contain more basic information about the process, whereas later ones contain more detailed information. However, all the necessary information is gathered, because contact by email was, also after the interviews, still possible.

The last point is that planning processes are constantly changing, as a consequence new points to improve and problems pop up. That results in changing roles of the actors. Therefore the results of this thesis might be useful in this point of time, but recommendations and conclusions should be interpreted in a broad way. Furthermore, this research is specific about ZWK, other projects might have other stakeholders and other relationships, which might lead to different conclusions and recommendations for future research.

5.3 Future research

In future research it might be interesting to focus on insurances against flood events as a way to make people aware of the consequences of floods. This has already been researched by Schwarze & Wagner (2007) and they came to the conclusion that this intention is good, but it is not a good solution. High costs for insurance can depress the price of property and private insurances could get a monopoly. Therefore they come up with the idea of making intelligent designed social insurance schemes as has been done in the US. In the US basic insurance for buildings and their contents is covered by the Federal Emergency Management Agency and is only given to municipalities of the National Flood Insurance Program. To take part in this program the municipality has to be at risk of flooding and they have to take the prescribed measures against flooding. A critical note on this can be that just the rich municipalities can provide those prescribed measures and take part in the programme, whereas poor municipalities cannot. This makes poor people more vulnerable for flooding. This policy is made in the US, it would be interesting to know if insurances against flooding in the Netherlands would be possible and how it would be possible.

In general it would be interesting to research what Dutch cases can learn from foreign water storage projects. Especially in the way the stakeholders cooperate in those projects and how they include citizens in those projects.

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