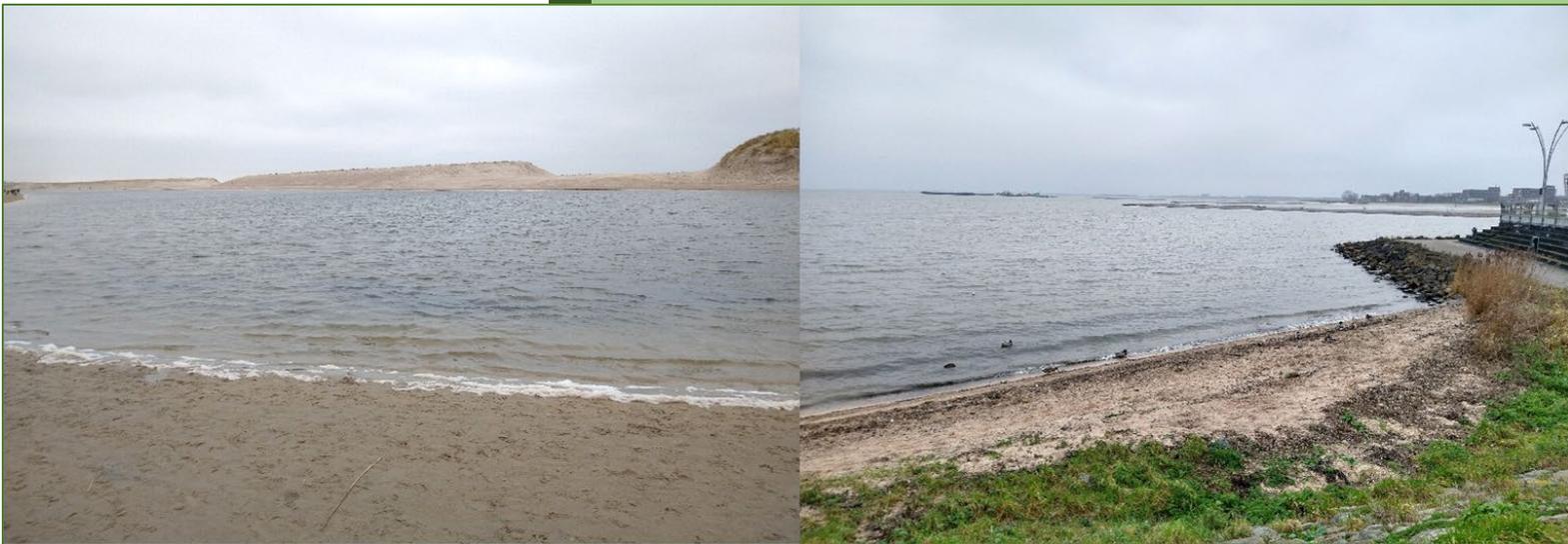


Nature-based solutions on flood risk policy in the Netherlands



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Nature-based Solutions on flood risk policy in the Netherlands: how governance modes could lead to environmental (in)justice issues

The concept of Nature-based Solutions is an upcoming topic in today's world of spatial planning. Known for its multiple benefits, the popularity of the Nature-based Solution-concept is increasing worldwide. However, because of their powerful image, Nature-based Solutions tend to ignore their negative impacts on their implementation areas. Several scholars criticize the concept of Nature-based Solutions for the fact that it does not take into account the interests and values of relevant parties. This exclusion of parties can be due to a lack of 1) recognition of parties, 2) procedural involvement, and/or 3) an equal distribution of burdens and benefits of the project. As soon as a project excludes relevant actors in forms of at least one of these elements, environmental justice will be harmed. This research analyzes two different projects in which Nature-based Solutions are used to protect coastal areas in the Netherlands from erosion. The projects differ from each other based on their used governance structure. By conducting interviews and collecting data from documents, this research aims to investigate how governance structures may influence the environmental justice outcomes of implementations of Nature-based Solutions in the Dutch coastal area.

Keywords: *Nature-based Solutions, environmental justice, governance structure, flood-risk management*

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Preface

This thesis is the completion of my Master's degree in Spatial Planning at the Radboud University, specializing in Cities, Water & Climate Change. Throughout my whole study period, I have developed a strong interests in water management and participation issues. Multiple of the projects I carried out during my years of study were on such issues, with this master thesis as a final piece.

For the last eight months, I have been conducting multiple interviews with a lot of different parties from different organizations. Not only did these interviews help me collecting data for my research, they also provided me with valuable information on what organizations related to spatial planning are like.

I would like to thank Maria Kaufmann for supervising my thesis. Not only did she offer great supervision by providing valuable feedback, suggestions, and insights, she also expressed much enthusiasm on the knowledge gained during this research, keeping me very motivated to carry on investigating.

Other than that, I wish to thank all participants of the interviews for their time and effort, and for the fact that they were willing to share their knowledge, expertise, experiences as a contribution to this project. Without them, I would not have been able to conduct this research.

I am happy to share the end product of my study with you, in forms of this master thesis. I hope you enjoy the research on: *'Nature-based Solutions on flood risk policy in the Netherlands: how governance modes could lead to environmental (in)justice issues.'*

Jorn van Soest

Summary

The concept of Nature-based Solutions has massively increased in its popularity. All over the world, spatial planning projects implement such solutions for the fact that they do not only reach the main objective of the project, but also realize additional values in the area. However, this positive framing of the concept tends to ignore the idea that implementations of such solutions could have negative consequences as well. Therefore, this thesis aimed to thoroughly investigate in the consequences of Nature-based Solutions as a result of different governance structures. The focus of this thesis was to find out how different governance structures could influence environmental justice when implementing Nature-based Solutions. To be able to examine this relationship, this research compared two projects in which different governance structures were used to enforce the Dutch coastal areas in the province of North-Holland.

The selected projects were the Hondsbossche Dunes project and the project of the Markermeer Dikes. Both projects consisted of Nature-based Solutions for the fact that they made use of 'soft' solutions in order to enforce the coast. For both projects, the solutions were mainly focused on the suppletion of sand, which would not only result in an enforced coast, but also in increased possibilities for recreation and ecological development.

The project of the Hondsbossche Dunes consisted of several public parties steering the project, whereas the Markermeer Dikes project was known for its public-private governance structure. During the analysis, it became clear that ideas on the value of participation differed between public and private parties, resulting in different values on the concept between the analyzed project teams.

To measure environmental justices, both projects were investigated in their selection, recognition, and inclusion of relevant actors (recognition justice), provided information and influence possibilities during participation processes (procedural justice), and distribution of burdens and benefits as outcomes of the project (distributive justice). Findings on these elements made possible to draw conclusions on the environmental justice outcomes of the projects.

The results of this thesis show that overall, both projects resulted in injustices within all three elements of environmental justice. When looking at the consequences of the projects' governance structures, the public-private governance structure resulted in more procedural injustices, for the fact that more people experienced lacks of provided information and possibilities to influence the project's decision when compared to the Hondsbossche Dunes project. However, since both projects resulted in environmental injustices, it can be concluded that it should not be assumed that Nature-based Solutions are without problems.

1. Introduction

1.1 Nature-based Solutions

In the 1970s, the idea of ecosystem or environmental services began to establish itself in the scientific literature. Later, during the late 2000s, the idea to make use of nature as a solution for environmental, social and economic problems got introduced and developed into the concept of Nature-based Solutions which considered people as passive beneficiaries of nature's benefits, but also considered them as those who could protect, manage, or restore natural ecosystems to contribute to addressing major societal changes. As defined by the European Commission, Nature-based Solutions can be considered as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience' (Maes & Jacobs, 2017). Since its introduction in scientific literature, the concept of Nature-based Solutions has been developed and applied by multiple international organizations (Cohen-Shacham et al., 2016).

With a worldwide increasing awareness of the value in addressing environmental, social, and economic challenges, the concept of Nature-based Solutions becomes more and more popular in the world of spatial planning. Organizations such as the Nature Conservancy and the International Union for Conservation of Nature have been actively integrating Nature-based Solutions into policy debates (IUCN, 2012). Also, the United Nations integrated Nature-based Solutions into their Agenda for Sustainable Development since it is acknowledged that Nature-based Solutions can contribute to several Sustainable Development Goals in different ways (United Nations, 2015).

With the goal of Nature-based Solutions being to tackle multiple problems at once, the concept is frequently framed as a rather positive concept. Due to this positive framing, benefits that actors receive from Nature-based Solutions are often the only consequences highlighted and their negative impacts are tend to be ignored. One important negative consequence of Nature-based Solutions that does not receive much attention is the justice perspective of the concept (Toxopeus et al., 2020). Even though it is expected that Nature-based Solutions increase the quality of life for citizens, it is unlikely that all segments of the population will benefit equally (Cole et al., 2017). An example of Nature-based Solutions resulting in injustice among residents, is the example of increasing land prices. With a successful implementation of Nature-based Solutions, areas can become more attractive due to the fact that not only the main objective of the solution got achieved, but also additional ecosystems are introduced in the area. These ecosystems transform the area into an attractive area with opportunities for leisure and nature, which leads to an increased value of the area with increasing land prices in the region as a result. An increase in the prices could lead to the potential displacement of population groups who cannot afford these new prices. With these developments, Nature-based Solutions in and around urban areas are influential factors in the shaping of gentrification processes (Cole et al., 2017; Kabisch et al., 2016). Swyngedouw (2007) stresses this problem by stating that the final compromises of such projects serve a neoliberal order in which governments fail to address citizens' most basic needs in order to subsidize the financial sector and take on grandiose projects designed to attract global capital.

Other examples in which the implementation of Nature-based Solutions lead to environmental injustices are the accesses to the outcomes of such projects. Studies have revealed that low-income, minority populations often have greater access to urban green spaces (Barbosa et al., 2007) and parks (Wen et al., 2013) when compared to high-income groups. At the same time, some populations are less likely to use parks for social and cultural purposes for safety reasons (Keith et al., 2018). Nature-based Solutions in

forms of urban green spaces and parks therefore may result in inequality when it comes to accessibility of these areas among different populations. These studies stress the complexity of the concept of Nature-based Solutions since it may result in injustices among all sorts of groups.

The complexity of Nature-based Solutions and its relationship with environmental justice issues is also reflected in the high number of factors that could influence this relationship. The examples above show that environmental injustices are able to occur as a result of the implementation of Nature-based Solutions in combination with economic, geographic and governance-based factors, which could make it challenging to implement Nature-based Solutions project while being environmentally just.

1.2 Governance structures and environmental justice

When looking at governance-based factors, many authors have criticized particular modes of governance on how they result in environmental injustices. For instance, Kronenberg et al., (2020) criticized a top-down governance structure for the fact that such structures result in a large group of people whose voices are completely missing in any project. These missing voices are frequently those of people in underprivileged groups. However, even when their voices are taken into account, it is not immediately out of the question that these underprivileged groups experience environmental injustices. This can be further explained with the example of the introduction of participatory processes in Russia. With the introduction of the federal program 'Comfortable City Environment', Russian citizens got encouraged to express their opinion on the locations of new parks and other amenities. Even though this may seem like developments aiming for environmental justice, these new attempts have been criticized for misinformation and public opinion manipulation (Zupan & Budenbender, 2019).

With environmental justice being the formal representation of 'disadvantaged communities' (Dobbin & Lubell, 2019), a holistic, local, collaborative governance structure seems to be the ideal solution that takes the concerns of those disadvantaged into account within decision-making processes. Even though such a collaborative governance structure can theoretically ameliorate some regulatory inequities, it may also reproduce many of the deeper and troublesome aspects of current decision-making processes. And, with the modification of current patterns of participation and representation, a collaborative governance structure might introduce new problems in environmental decision-making (Foster, 2002).

According to (Roth et al., 2017), hybrid governance structures, in which policy makers collaborate with non-public actors such as businesses, citizens and NGO's, potentially constrain the capacities of elected politicians and public administrators to carry out their role as representative decision-makers, when private actors co-fund and decisions are made outside the official democratic process. This shows that any form of a hybrid governance structure could lead to environmental injustice outcomes, since it constraints the functioning of the democratic system.

There is a large array of governance structures criticized for their impacts on environmental justice issues. It seems that each governance structure has its own limitations when it comes to achieving an environmental just outcome of a project. It can therefore be of value to investigate in how environmental justice outcomes as a result of different modes of governance can be improved.

1.4 Research aim and research questions

1.4.1 Research aim

This research aims to complement the already existing knowledge on of Nature-based Solutions by critically reflecting on both the positive and negative consequences of the concept. Since organizations like the EU are increasingly promoting Nature-based Solutions as a way to foster biodiversity and create more climate-resilience, it is important that the concept is reflected upon critically. Due to the complexity of the concept of Nature-based Solutions, the concept can have diverse justice implications, which might be influenced by the governance structure chosen for such projects. The main aim of this research is therefore to examine how differences in governance approaches may lead to difference environmental justice outcomes within Nature-based Solutions implementations in the Dutch coastal area. The outcome of this research may be used as an advice for future projects aiming to implement Nature-based Solutions as a way to achieve the project's objectives and to add extra values with the use of such solutions.

To create such an advice, two projects in the Dutch coastal area in which Nature-based Solutions are used to ensure water safety will be analyzed and critically reflected upon. Both projects are chosen for their contextual similarities, and their differences in governance structures. With such a selection, it is made possible to analyze the influence of different governance structures on justice implications of Nature-based Solutions projects.

1.4.2 Research questions

This research will consist of a comparative case study with which two different cases will be analyzed and compared. These case studies are the project of the Hondsbossche Dunes on the one hand, and the project on the Markermeer Dikes on the other. The research objective of analyzing how different governance structures may lead to different environmental justice outcomes with the implementation of projects using Nature-based Solutions can be achieved by finding an answer to the following research question:

How do different governance structures influence the environmental justice outcomes of particular Nature-based Solutions projects?

In order to answer this main research question, it is important to find answers to the following sub questions:

1. *What are the governance structures of both projects?*
 - a) *What parties are involved in the projects (stakeholder analysis)?*
 - b) *How are resources distributed over policy actors?*
 - c) *What are the rules of the game at both projects?*
 - d) *What are discourses on Nature-based Solutions within these governance structures and how do they differ from each other?*
 - e) *What are discourses on the importance of participation within these governance structures and how do they differ from each other?*
2. *What are the environmental justice outcomes of both projects?*
 - a) *To what extent are people recognized as relevant actors in the decision-making processes of the project (recognition justice)?*
 - b) *What issues of procedural justice emerge in the project? (procedural justice)?*
 - c) *How are the burdens and benefits of the projects distributed (distributive justice)?*

1.5 Societal and scientific relevance

1.5.1 Societal relevance

For the societal aspect, this thesis is mainly relevant for the fact that the implementation of Nature-based Solutions is an emerging concept which is used in spatial planning projects for only a couple of years. The concept tends to ignore its negative impacts and therefore, it is important that a complete overview of consequences of Nature-based Solutions is provided. This investigation contributes to this completion process by providing a complete overview of the consequences of Nature-based Solutions on environmental justices.

With this study focusing on the relationship between governance structures and environmental justice within Nature-based Solutions implementations, conclusions on this relationship can be considered as an advice for future projects. With the comparison of two different projects characterized by different governance structures, this research can be valuable for future projects to get an idea of what the consequences could be of using particular consequences for environmental justice issues.

The importance of participation has increased throughout the last decades. Governments increasingly recognize that good public policy cannot be achieved without engaging a wide range of views (OECD, 2009). As a result, high-quality public engagement has become important in a modern representative democracy, marking a shift from representative democracy to new forms of participatory governance (Yetano et al., 2010). Such changes in the world of governance come with new challenges on participatory issues. By thoroughly analyzing environmental justice issues, this thesis may be of value by finding complexities experienced in the field of participation. Insights on these complexities can be used by future projects as guidelines on how to deal with the changed value of participation.

The chosen cases for this study are located on coastal areas in the Netherlands. Even though these locations are specific and unique areas, these are not the only areas in which environmental (in)justice issues as a result of governance structures may occur. Similar situations could occur as a result of implemented Nature-based Solutions in multiple different areas. Therefore, lessons learned from this thesis could not only be of value for similar projects on the Dutch coast, but also on other areas in which Nature-based Solutions are implemented.

That being said, the outcome of this research can be of great value for policymakers planning to implement Nature-based Solution projects and are deciding on what governance structures could be the most suitable for their project.

1.5.2 Scientific relevance

As Nature-based Solutions being a recent concept that is rapidly becoming to the spotlight, the number of publications on Nature-based Solutions is growing and expected to increase over the next decade (Mendes et al., 2020). Most of the current literature that can be found on the societal consequences of Nature-based Solutions is based on cities and other urban areas (van den Bosch & Ode Sang, 2017; Kabisch et al., 2016; Raymond et al., 2017) whereas there is not much literature on the societal consequences of Nature-based Solution in coastal areas. When looking at research how actors experience the consequences of such solutions, there is only a small number of studies linking the concept of Nature-based Solutions to that of environmental justice. Most of the studies on the experiences of actors focus on the perceived benefits of Nature-based Solutions, rather than on the perceived risks (Ferreira et al., 2020). Since an understanding of perceived risks among Nature-based Solutions by citizens and other relevant parties is fundamental for effective planning, implementation, and management (Conway & Yip, 2016), this thesis can be of scientifically valuable.

When taking the concept of environmental justice apart, there is much need for new insights. Several scholars have investigated in environmental justice issues in the United States. However, only a few researchers have examined how environmental justice issues are conceptualized in other countries over the world. Environmental justice is often described as the idea that ethnic and racial minority and low-income groups bear a disproportionate burden from environmental hazards than the majority population (Coenen & Halfacre, 1999). However, this conceptualization covers only a part of the concept of environmental justice, which can be defined as ‘the principle that all people and communities are entitled to equal protection of environmental and public health laws and regulations’ (Bullard, 1996).

It is important that the concept of environmental justice in its existing literature is not merely considered as an unequal inclusion of minorities within decision-making processes and the decisions made in the end. The concept of environmental justice should be considered as Bullard’s (1996) definition that states that all people should be entitled to an equal protection of environmental and public health laws and regulations. This research can be a valuable contribution to the existing literature on environmental justice issues since it addresses the concept of environmental justice as a whole, rather than investigation in measured environmental injustices among ethnic and racial minorities from which studies are already over-represented in this topic’s existing literature.

There is some research done on the relationship between governance structures and Nature-based Solutions. Several scholars claimed that there is a need for collaborative governance structures in order to recognize the complexity of urban issues and the interconnectedness of environmental and social issues, including issues of social equity and justice (Kabisch et al., 2017; Randrup et al., 2020). However, research on this relationship follows an initial pattern, common in other environmental concepts and thereby mainly consists of general, vague conclusions that are based on findings on other environmental concepts (Mendes et al., 2020). By linking the concept of Nature-based Solutions to the comprehensive Policy Arrangement Approach of Liefferink (2006), this research adds to the lack of precise and concrete literature on the relationship between governance structures and Nature-based Solutions.

2. Theoretical framework

2.1 Nature-based Solutions

2.1.1 Definition of Nature-based Solutions

As said in the introduction, Nature-based Solutions can be defined as ‘solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience’ (Maes & Jacobs, 2017). However, definitions of the concept might slightly differ among different organizations implementing such solutions. Since the concept of Nature-based Solutions leaves room for interpretation, it can be defined in different ways. This may, for instance, lead to private organizations stressing cost-efficiency as an important aspect of the concept. So defines the market-oriented organization of EcoShape ‘Building with Nature’ as a ‘cost-efficient, resilient, and sustainable philosophy in which natural processes are used to gain an added value for societal functions’ (Ecoshape, 2020). Another term used to describe Nature-based Solutions is the term ‘natural climate buffers’. A coalition of eight nature organizations describes this concept as ‘a way to provide safety and beauty in the Dutch landscape’ (Klimaatbuffers, n.d.-b).

These example shows that it is possible to interpret Nature-based Solutions in different ways. Whereas an organization like EcoShape interprets the concept from a market-oriented view, nature organizations may tend to focus more on preserving and creating natural beauty within landscapes.

2.1.2 Limitations of Nature-based Solutions

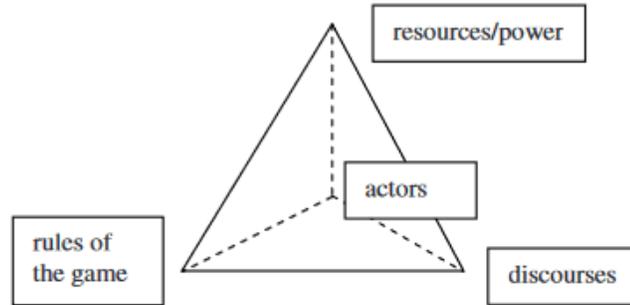
As explained in the first chapter, Nature-based Solutions are considered as powerful solutions for the fact that they do not only tackle the relevant problem, but are also likely to add economic, social and environmental benefits and provide more resilience with the creation of new ecosystems. However, projects including Nature-based Solutions tend to ignore the negative consequences of these solutions. (Kotsila et al., 2020) unveiled the limitations of Nature-based Solutions with the use of the following underlying assumptions of the concept:

- Nature-based Solutions focus on triple-win outcomes. The concept emphasizes benefits for the environment, society and economy, through a focus on innovation, growth and job creation. It hereby ignores socio-environmental inequalities and injustices that are built into current capitalist neoliberal economies, and of their dire socio-ecological consequences.
- Nature is seen as a repository of prototype processes that can be objectively measured, transformed and harnessed. As a result, nature’s commodification creates new sites for capital valuation and accumulation.
- It is assumed that socio-ecological trade-offs or other ‘disservices’ have been negotiated and digested in Nature-based Solutions implementation while clashing interests and visions surrounding nature can only be incorporated in Nature-based Solutions as a matter of interpretation and contestation.

Kotsila et al. (2020) are not the only scholars criticizing the concept of Nature-based Solutions. Multiple scholars criticize Nature-based Solutions for the fact that they lead to socio-environmental inequalities and injustices (Haase, 2017). Sekulova & Anguelovski (2017) explained that environmental injustice also occurs in green spaces since planners and park managers seem to fail at considering culturally-specific uses of parks and green areas by specific groups of residents.

2.2 Policy Arrangement Approach

By using the framework of the policy arrangement approach, this thesis aims to thoroughly investigate the governance structures of both selected projects. A policy arrangement can be defined as the temporary stabilization of the content and organization of a policy domain (van Tatenhove et al., 2013). Wiering & Arts (2006) described a policy arrangement as the way in which a certain



1: The tetrahedron of the PAA (Lieberink, 2006)

policy domain is shaped in terms of organization and substance. The Policy Arrangement Approach (PAA) of (Lieberink, 2006) can be used in order to link changes in policy practices to broader, structural changes in contemporary societies. According to Liefferink, policy arrangements can be analyzed with the use of a four-dimensional analysis. This four-dimensional analysis consists of four different perspectives highlighting the different aspects of a policy arrangement. An analysis of a policy arrangement can be done by starting with the analysis of one or more of the perspectives, based on the research question. Changes in one of the four dimensions may induce change in other dimensions. It is therefore important that an analysis of a policy arrangement addresses the entire tetrahedron (figure 1).

As shown in figure 1, a policy arrangement consists of actors/coalitions, resources/power, rules of the game, and discourses.

The starting point of the analysis depends on the chosen research question. However, using the policy arrangement approach as an analysis tool, it is essential to not only analyze the dimension chosen as a starting point, but also take into account the other three dimensions to gain a comprehensive view on the policy arrangement.

2.2.1 Actors/coalitions

The dimension of actors/coalitions can be used for both theoretical-, and practical-oriented research questions. Actors refer to the set of players in a given policy domain (Veenman et al., 2009). The actors within a policy domain may either act individually or as policy coalitions. Individual actors within a policy domain have their own resources and/or interpretations of a policy discourse, whereas policy coalitions consist of a number of actors sharing the same resources and/or interpretations of policy discourses (Lieberink, 2006). Starting a policy arrangement analysis from an actor perspective begins with the identification of relevant actors and their influence in the process. This can be done through the study of policy documents, but also in forms of fieldwork. With this stakeholder analysis, it may be useful to distinguish between central and peripheral actors and to cluster actors that fulfill similar roles in the arrangement (Lieberink, 2006).

2.2.2 Resources/power

The concept of resources/power consists of the resources and their distribution over policy actors (Clegg, 1989). The concepts of resources and power are strongly related to each other since the distribution of resources is often fundamental to power. One of the elements of power can be regarded as the ability of actors to mobilize resources in order to achieve certain outcomes in social relations. Power can also be

considered as an asymmetrical distribution of resources in a society (Arts & Tatenhove, 2004; Giddens, 1984). Questions on resources and power within a policy arrangement include questions on how resources and power shift between, for instance, the nation state, sub-national levels, and the EU. Such questions often address the introduction or withdrawal of resources from the policy arrangement in forms of policy interventions. Therefore, a policy arrangement analysis starting from the dimension of resources/power can be valuable for studies on impacts of policy interventions (Liefferink, 2006).

2.2.3 Rules

Rules can be described as the formal procedures and informal routines of interaction within institutions. Rules consist of, for example, regulations, legislation and procedures, relevant to a certain policy domain (Giddens, 1984). The concept of rules can be conceived in multiple different ways, but these conceptions have in common that rules guide and constrain the behavior of individual actors. The possibilities for actors shaped by these rules can take forms of the access to policy areas, the participation of policy actors in decision-making, and the role of policy actors in implementation processes (Veenman et al., 2009). Rules are the guidelines provided to actors to define the way the game should be played. With those guidelines, rules determine which actors are the right players to be involved, and which are not. Rules also define the interrelations between actors (Arts & Tatenhove, 2004). This definition of rules shows the strong relationship between the dimensions of rules and actors. Starting the analysis from the dimension of rules can be a useful strategy to study the influence of institutional change on policy areas (Liefferink, 2006).

2.2.4 Discourses

The final dimension of the PAA is the dimension of discourses. A discourse can be defined as a set of ideas, concepts and narratives which give meaning to a certain phenomenon in the real world (Veenman et al., 2009). Discourses are relevant on both the level of ideas about the organization or society, and the concrete policy problem at stake. Ideas on the organization or society could influence the policy arrangement by for instance introducing different forms of governance. Discourses on the policy problem at stake on the other hand, include ideas on the character of the problem, its causes and its possible solutions. A policy discourse can be defined as 'a specific ensemble of ideas, concepts, and categorizations that are produced, reproduced and transformed in a particular set of practices and through which meaning is given to physical and social realities' (Hajer, 1995). Discourses include therefore not only the ideas, concepts and narratives on specific issues, but also the expressions of these ideas in reality. Analyzing a policy arrangement with discourses as a starting point can be interesting to study the empirical effects of changing problem perceptions (Liefferink, 2006). By using the PAA as a method to analyze governance structures, discourses should be considered as the subject of governance, rather than the activity of governing itself (Arnouts et al., 2012).

The Policy Arrangement Approach can be of great value by analyzing governance modes since a governance mode equals the organizational component of a policy arrangement (Arnouts et al., 2012). The dimensions of actors, power, and rules of the game are important dimensions with the shaping of governance structures. As said above, the dimension of discourses should be considered as the substance of a governance arrangement, rather than its organizational part.

2.3 Governance

Before the Policy Arrangement Approach can be used to analyze how governance structures are arranged, it is of importance to gain a clear understanding on the meaning of governance as a concept.

The concept of governance can be used differently in different cases. Differences in the meaning of governance can be found in the different perceived role of the state. Some authors think of governance as a situation in which the state has minimal or limited influence. Others view governance as 'self-organizing networks' (Kooiman & Bavinck, 2005).

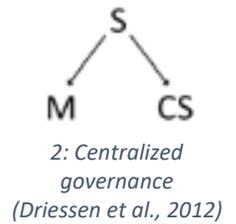
The importance of the concept of governance has increased since it got acknowledged that the public sector is not the only controlling actor when it comes to the solution of societal problems. The interaction between actors pertaining to the state, the market, and civil society has received more attention (Driessen et al., 2012). This acknowledgement is frequently referred to as the 'shift from government to governance', a concept in which the state is considered unable to articulate and pursue collective action and impose its will on society because the governing challenges are too complex, diverse, and dynamic (Hajer & Wagenaar, 2003). Hysing (2009) distinguishes between two different ways on how the shift from government to governance takes place. On the one hand, the shift can be considered as a decreasing importance of the state, where the functions and power of the state are transferred to international policy levels, local actors, and agencies and private actors (Rhodes, 1997). On the other hand, the governance shift can be seen as a shifting role of the state, rather than a shrinking one. This governance shift considers the state in a governance structure as a facilitator and a cooperative partner (Kooiman, 2003).

With the different roles a state can have within a governance structure, multiple governance modes emerge. Differences in these modes are determined by the role of the state and/or other governmental actors, and the influence of non-governmental actors. Since different authors have different views on governance, there are multiple ways to distinguish between governance modes. Authors like Kooiman (1999) divide governance in three governance modes by using rather broad definitions. He distinguishes between hierarchical, co-, and self-governance as governance modes which can be used to describe all different forms of governance. The governance modes as defined by Pierre & Peters (2019) are mainly determined by the role of governmental and non-governmental actors. Driessen et al. (2012) on the other hand distinguish five modes of governance. These five governance modes are a result of the consideration of elements other than roles of governmental and non-governmental actors with the defining of governance modes. By not only taking into account the role of actors, but also elements such as power and rules of the game, Driessen et al. (2012) managed to define five concrete governance modes which are determined by the roles and relations between the state, the market, and the civil society. Since the elements used by Driessen et al. (2012) are similar to the elements the PAA consists of, their division of governance modes will be used for this research.

The five modes of governance Driessen et al. (2012) distinguish are the following: centralized, decentralized, public-private, interactive, and self-governance. These governance modes will be briefly described by the elements of the PAA:

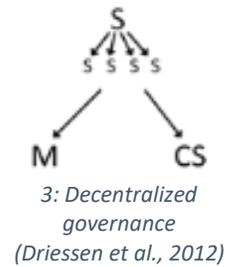
2.3.1 Centralized governance

Centralized governance is one of the two governance arrangements where actors pertaining to the public domain are the main actors. Central, regional or local governments take the lead in such arrangements, and the market and civil society are the recipients of the incentives of the government. These leading actors determine the autonomy of other actors and make use of formal rules within their policy (Driessen et al., 2012).



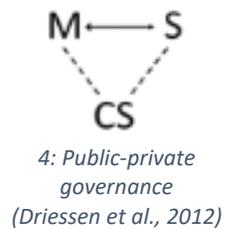
2.3.2 Decentralized governance

The other governance mode in which the main actors are those within the public domain, is decentralized governance. Decentralized governance differs from centralized governance for the fact that the initiating actors are various actors within the public domain instead of the one main initiating actor as is seen within centralized governance. With decentralized governance, there is a high likelihood of stakeholder involvement. Like centralized governance, the rules within this governance structure are formal rules (Driessen et al., 2012).



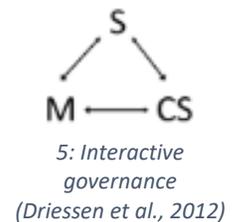
2.3.3 Public-private governance

When joint efforts are made among partners within the market sphere and the government, we speak of public-private governance arrangements. Actors within this governance mode are granted with some autonomy within predetermined boundaries, which are set by the government. This emerging autonomy of actors creates a situation in which power is based on competitiveness, contracts, and legal recourse. Rules within this governance structure can be both formal and informal (Driessen et al., 2012).



2.3.4 Interactive governance

Interactive governance consists of a cooperation between governments, market actors, and civil society, where all partners are collaborating on equal terms. The power within this governance structure is based on legitimacy, trust, and knowledge. Like public-private governance, the boundaries that actors must adhere to, are still set by the government and the rules are both formal and informal (Driessen et al., 2012).



2.3.5 Self-governance

The last described mode of governance is self-governance, in which primarily actors pertaining to the private domain participate. Private efforts and investments are initiated in order to achieve environmental goals. With self-governance, actors from the market and civil society enjoy a far-reaching autonomy and are able to initiate new approaches themselves. This also means that the involvement of other parties depends on the governing entities. Regulations set by the central governance will always be of relevance to some extent. However, initiating actors have the autonomy to craft their own rules to a certain extent (Driessen et al., 2012).



Categorizing modes of governance is needed to determine the governance modes of both projects analyzed within this research. Analyzing both projects with use of the PAA makes it possible to determine what governance modes both projects consist of, which then can be used for the analysis of the connection between governance modes and environmental (in)justice outcomes.

2.4 Environmental justice

Environmental justice can be described as a set of actions that is concerned with the fair distribution of environmental burdens and benefits, aspiring to act on behalf of the disadvantaged. However, the concept of environmental justice is not solely about the distribution of burdens and benefits, it also highlights the necessity to include issues of participation and recognition (Reese & Jacob, 2015).

The majority of literature on environmental justice uses the concept to illustrate situations in which low-income communities and colored communities face more environmental risks than more well-off or white communities. Activists within the field of environmental justice call for more equitable distribution of environmental risks or for less risks overall, but especially in communities already unduly burdened. (Schlosberg, 2003).

Groups facing environmental injustices argue that these injustices come from a lack of state oversight. They do not just call for more recognition, but also for a more thorough and participatory input into, and control over, environmental decisions. Groups do not want others simply saying that they will take care of the community's interests. These groups wish to be consulted from the start, speak for themselves, work with other groups and agencies, and offered a full partnership in the shaping of decisions (Schlosberg, 2003). To illustrate this, Schlosberg (2003) distinguishes the concept of environmental justice in three kinds of justice: distributive justice, procedural justice, and recognition justice. Within the environmental justice movement, one simply cannot talk about one aspect of injustice without it leading to another. This conceptualization is used for this thesis in order to measure the environmental justice outcomes of the analyzed projects.

2.4.1 Recognition justice

Recognition justice puts the focus on identity politics and social processes. In cases of misrecognition, groups may be overlooked or stigmatized. For environmental justice, recognition justice is used to highlight the rights and particular needs of certain groups, which may be unrecognized. The main essence of recognition justice is to help to achieve equality in people's ability to participate in society and the social sphere (Walker & Day, 2012). Recognition injustice is not only a problem for the fact that it constraints people, but also because recognition justice is considered as the foundation of distributive justice. Young (2011) described the importance of recognition justice by stressing that injustice is not solely based on inequitable distributions of goods. According to Young (2011), it is not only important to understand *what* the distribution looks like, but also what *determines* poor distributions. Distributional injustice comes directly out of social structures, cultural beliefs, and institutional contexts (Young, 2011). Another author who stressed the idea that culture is a 'legitimate and necessary terrain of struggle' (Fraser, 1998). Like Young, Fraser focuses on the reason behind inequity and stresses that it is of importance to consider both the structural nature of the construction of subordinate and disrespected identities and communities.

As discussed previously, this thesis aims to focus on the concept of environmental justice as a whole, defined as 'the principle that all people and communities are entitled to equal protection of environmental and public health laws and regulations' (Bullard, 1996). According to Coenen & Halfacre (1999), the Netherlands can be considered as a relatively socially-conscious society when compared to other industrialized nations. Coenen & Halfacre (1999) stress the importance of how conceptualizations of environmental justice can differ among countries.

For this thesis, it is of importance that recognition justice is not measured solely based on factors such as cultural beliefs and people's identities since, as assumed by Coenen & Halfacre (1999), the Netherlands as a society emphasizes equity and has successfully provided a 'safety net' for many of its citizens. This thesis therefore not only focuses on how groups are (mis)recognized as relevant parties, but also on what groups are in-/excluded with the project. This thesis therefore also includes the concept of 'inclusion' as described by Simcock (2016) to measure recognition justice. Inclusion refers to the question of who is present and given voice in a decision-making process (Hunold & Young, 1998). Simcock (2016) makes clear that all those affected by a decision should be involved to some degree in the making of that decision. It should however, be taken into account that people may have a 'right' to be included, but do not make use of this right. By measuring the concept of inclusion, this responsibility of actors should be considered (Simcock, 2016).

2.4.2 Procedural justice

Where recognition justice is concerned with recognize certain groups, procedural justice is concerned with processes, including crucially those through which unequal distributional outcomes are produced or sustained (Walker & Day, 2012). Procedural justice can affect the behavior of the public. People's reactions to legal authorities are based on their assessments of the fairness of the processes by which legal authorities make decisions and treat members of the public (Tyler, 2002). It is suggested that people given the opportunity to participate in a decision are more likely to see that decision as just than those given no such opportunity (Cohen, 1985).

Multiple scholars divide the concept of procedural justice into similar 'pillars'. The divisions used for this study are the divisions of Simcock (2016), and Walker & Day (2012):

- *Influence* is about the extent to which opinions, suggestions and concerns of participants are taken into account with the shaping of the decision outcomes. The category of 'influence' is strongly linked to the concept of participation. Participation can be described as 'actions demonstrating forms of involvement performed by parties within evolving structures of talk' (Goodwin, 2000). Within the category of influence, there are three types of influence participants can have within decision-making processes: 'Listen as a spectator' describes a situation in which participants receive information about a decision, but do not have any influence over this decision. 'Consultative influence' means that actors are able to give their opinion, but the final decision will be made by others. At last, 'direct authority' describes a situation in which actors are able to formally shape the outcome of a decision. This can either be done by taking this decision individually or by sharing power with others in a democratic process (Simcock, 2016). Walker & Day (2012) describe influence as the importance of 'meaningful participation in decision-making'. In their study, they highlight the necessity to represent all interests of those affected in a variety of relevant decision-making processes.
- *Information* is considered crucial for procedural justice. A transparent process in which participants are provided with appropriate, sufficient and accurate information is essential for effective participation and procedural justice (Simcock, 2016). Walker & Day (2012) highlight the importance of access to information. According to them, being able to know the scale of the problem at stake, its occurrence, and its patterning is fundamental to being able to address it.
- *Access to legal processes* explains the importance of the provision of mechanisms to challenge the decision-making and actions of the project teams. It is a necessity to have laws and

regulations protecting the interests of actors. However, it is also important that these actors are enabled to make use of courts to enforce these laws and regulations (Walker & Day, 2012).

2.4.3 Distributive justice

Distributive justice is about the question 'who gets what?' According to John Rawls (1971), the question to this answer can be found when a the distribution of goods is chosen by a hypothetical person who is ignorant of his own status, and thus of its competitive advantage or disadvantage, in the society. Inequality can be acceptable under the conditions that the benefits are divided among those who are disadvantaged in general. In either case, some notion of fair distribution of the burdens and benefits should be in order (van Parijs, 2007).

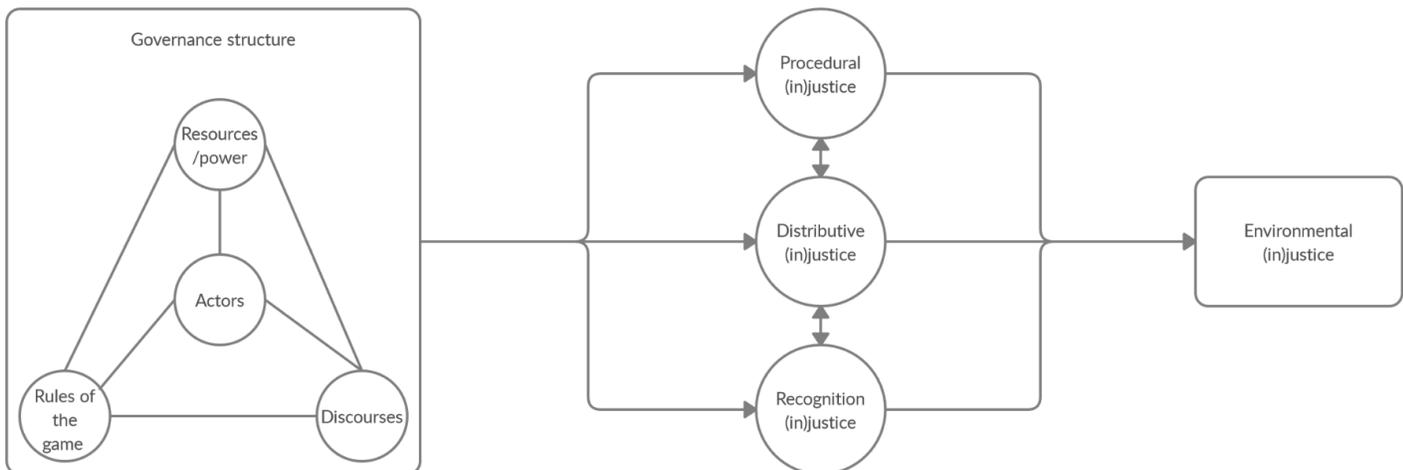
Sen (2009) has a different view on how distributive justice can be achieved. According to Sen, seeking equality in the capability to achieve valued functionings should be at the core of distributional justice. In this view, functionings reflect the various things a person may value doing or being. Since Sen (2009) and Rawls (1971) both have different views on what distributive justice consists of, it is essential to not only gain an understanding of the distribution of benefits and costs, but also get an understanding on the reasoning behind this distribution. For instance, actors could still conceive an inequal distribution as a just one as soon as the reasoning behind this distribution is in line with Rawls' view on distributive justice.

While distributional issues are crucial to a satisfactory conclusion of justice, it is a mistake to reduce social justice to distribution (Schlosberg, 2009). Distributive injustice is not solely based on the inequitable distribution of benefits. There are key reasons for distributive injustice which can be found in incorrect recognition and/or procedural processes. According to Young (2011), a part of distributional injustice comes directly out of social structures, cultural beliefs, and institutional contexts (recognition justice).

2.5 Conceptual framework and operationalization

2.5.1 Conceptual framework

The aim of this research is to find out how governance structures can influence environmental justice when projects implement Nature-based Solutions. The conceptual framework below shows the steps that have to be taken in order to answer the research question connected to this research aim. The first step is to determine the governance structures of the selected cases for this research. These governance structures can be determined with the use of the four dimensions of the PAA, as described in the theoretical chapter. Since these four dimensions of the PAA are interconnected, a thorough analysis of those dimensions may result in a clear, comprehensive overview of the governance structures. The second step is to investigate in the extent to which these governance structures influence procedural, distributive and recognition justices. Also, as the different types of justices are interconnected, relationships between the types of justice can be found and taken into account in the investigation. After investigating in the extent to which a governance structure influences the types of environmental justice, it is possible to conclude in what way environmental (in)justices can be influenced by governance structures and how different governance structures may result in different environmental justice issues.



7: Conceptual framework

2.5.2 Operationalization

To take the step from theory to the empirical research, it is necessary to operationalize. Operationalization is about the translating of theoretical concepts into entities that can be observed or measured in the real world. The operationalization process consists of three steps: the definition of theoretical concepts, the determination of different ways in which the theoretical construct can express itself in the real world, and the determination of values on the created variables (van Thiel, 2014).

The main theoretical concepts of this research are the concepts of governance and environmental justice. As is shown earlier, the concept of environmental justice can be divided into the categories procedural justice, distributive justice, and recognition justice. Since these concepts are not measurable in the real world yet, it is important to find ways in which these concepts can express themselves.

The operationalization table below describes the concepts of 'governance structure' and 'environmental justice' by their elements and shows indicators on how these elements can be measured.

Concept	Description	Indicator
Governance structure		
Actors/coalitions	The set of players in a given policy domain	<ul style="list-style-type: none"> • Types of relevant parties • Identification of relevant parties • Roles of relevant parties • Importance of relevant parties (peripheral/central) • Interests of relevant parties
Resources/power	the resources and their distribution over policy actors	<ul style="list-style-type: none"> • Types of resources (financial, legal, etc.) • Number of actors provided with power/resources • Types of actors with power/resources • Dependence of actors on each other for resources
Rules of the game	The formal procedures and informal routines of interaction within institutions	<ul style="list-style-type: none"> • Rules, regulations, legislations policies and procedures on the fields of water safety, participation, culture, and nature (formal rules) • Activities outside of these formal rules (informal rules and routines)
Discourses	The set of ideas, concepts and narratives which give meaning to a certain phenomenon in the real world	<ul style="list-style-type: none"> • The actors' views on governance discourses (public participation etc.) • The actors' views on substantive discourses (Nature-based Solutions, nature, biodiversity etc.)
Environmental justice		
Recognition justice	The equality in people's ability to participate in society and in the social sphere	<ul style="list-style-type: none"> • The extent to which the rights and needs of certain groups are recognized and respected
Procedural justice	Processes, including crucially those through which unequal distributional outcomes are produced or sustained	<ul style="list-style-type: none"> • Type of relevant parties that are present and given voice in a decision-making process • The extent to which relevant parties make use of their right to participate • The extent to which opinions, suggestions and concerns of participants are taken into account with the shaping of decision-making outcomes (influence) • The extent to which relevant actors have access to transparent information (information) • Possibilities for relevant parties to appeal (access to legal processes)
Distributive justice	Equal distribution of goods, ignorant of competitive advantages or disadvantages in the society	<ul style="list-style-type: none"> • The costs and benefits as a result of the project • The distribution of costs and benefits among the disadvantaged • The distribution of costs and benefits among the advantaged

The indicators measuring the elements of the PAA determine the final governance structures of both project as described in the theoretical chapter. A comprehensive research to the four dimensions of a policy arrangement may result in a clear overview on the governance structures of both cases selected for this research.

The same applies to the concept of environmental justice. The indicators measuring the elements of environmental justice provide an overview of the extent to which these elements are achieved by the implementation of the Nature-based Solution. By analyzing the elements of environmental justice, the indicators indirectly provide illustrate the extent to which environmental justice is achieved.

3. Methodology

3.1 Research strategy

This thesis made use of a comparative case study of two cases in order to analyze the impacts of governance structures on environmental justice outcomes. This paragraph discusses the strategy used to find answers to this research question. To clarify the decision-making of this research strategy, it is not only important to describe the chosen strategy by its pros and cons, but also to describe the philosophy behind this research.

3.1.1 Research philosophy

A research philosophy refers to a system of beliefs and assumptions about the development of knowledge (Saunders et al., 2007). A definition of different paradigms consists of answers to the *ontological*, *epistemological*, and *methodological* questions (Guba & Lincoln, 1994).

- The *ontological* question is about the form and nature of reality. What is reality and what can be known about it? Ontologies are theories of what exists. The ontological assertions of one philosopher can not only be radically different from those of another, but they also can be totally contradictory or completely unconnected (Rawnsley, 1998).
- The *epistemological* question asks whether or not there are necessary and sufficient conditions for justifying belief and refuting skepticism (Rawnsley, 1998). Epistemology can be seen as a way of looking at the world and making sense of it (Crotty, 1998). The question asked from an epistemological point of view is 'how is it possible to find out about the world?' or 'how can we find out what is 'real'?' (Al-Saadi, 2014).
- At last, the *methodological* question is about what the investigator can do to find out whatever he or she believes can be known. It is important that the methods are fitted to a predetermined methodology (Guba & Lincoln, 1994).

The philosophy underpinning this research is interpretivism. Interpretivism emphasizes that humans are different from physical phenomena because they create different meanings and therefore cannot be studied in the same way as these physical phenomena. Different people have different cultural backgrounds, which result in different experiences of social realities among different people (Saunders et al., 2007). Interpretivism seeks to understand a particular context, and the core believe of the interpretive paradigm is that reality is socially constructed (Willis et al., 2007).

That being said, the interpretivist approach answers the ontological question on 'what is real' by explaining that the world is complex, and that people, including researchers and their research participants, define their own meanings – and thus, their own reality – within respective social, political, and cultural settings. Understanding the experiences of individuals and groups lies at the heart of interpretive inquiry (Potrac et al., 2014).

The epistemology of interpretivism consists of a reality which is shaped by different interpretations. The interpretation of the researcher largely influences what is real and the view of the researcher thereby shapes the reality of the inquiry.

This research philosophy underpins this study for the fact that it strongly focused on individuals and their views on the project and its processes. The concept of environmental justice is a complex concept and cannot be tested universally. People's interpretations strongly influence the extent to which

environmental justice exists and are therefore centralized in this research. Interactions between the investigator and the respondents were essential to receive a clear view on the different interpretations and realities.

3.1.2 Comparative case study

A case study can be defined as '*an intensive, detailed, in-depth study, examination or investigation of a single unit, the case*' (Dempsey & Dempsey, 2000). The case study is most likely to be an appropriate research strategy for 'how' and 'why' questions (Yin, 2003) and therefore a useful strategy for this research. With the comparison of two cases, this thesis consisted of a comparative case study. A comparative case study can be used to examine several cases to understand the similarities and differences between the cases (Baxter & Jack, 2008).

In order to perform a case study correctly, it is important to carefully look into the pros and cons of case studies to prevent undesirable consequences to occur. Flyvbjerg (2006) listed five misunderstandings about case studies which will be elaborated:

1. *Theoretical (context-independent) knowledge is more valuable than concrete, practical (context-dependent) knowledge.* According to Flyvbjerg, practical knowledge should not be discounted for the fact that it is important for the development of a nuanced view of reality. Flyvbjerg stresses that there is need for a combination of both theoretical and practical knowledge.
2. *One cannot generalize on the basis of an individual case; therefore, the case study cannot contribute to scientific development.* When case studies are used as 'Black Swans', they may be able to reject already existing theories and thereby contribute to scientific development.
3. *The case study is most useful for generating hypotheses; that is, in the first stage of a total research process, while other methods are more suitable for hypotheses testing and theory building.* This idea is simply not true due to the fact that case studies can be used to generalize by falsifying theories. When using case studies to falsify existing theories, case studies can be used for not only generating, but also testing hypotheses.
4. *The case study contains a bias toward verification, that is, a tendency to confirm the researcher's preconceived notions.* The room for researchers to add their own judgement to the research created the assumption that case studies generally contain a bias toward verification. However, due to the in-depthness of the research strategy, a case study does not contain a greater bias towards verification than other methods of inquiry.
5. *It is often difficult to summarize and develop general propositions and theories on the basis of specific case studies.* Due to the importance of narratives within case studies, it is considered difficult to summarize and develop general propositions and theories using a case study. However, a case study should not be summarized easily since it should be read as a narrative.

This thesis aimed to measure the extent to which different modes of governance influence the outcomes of environmental (in)justice within projects concerning Nature-based Solutions. Both theoretical and practical knowledge was needed in order to measure this research aim. A comparative case study is used to find answers to the research question by exploring two cases and comparing them to each other. By using such a strategy, this case study can be considered as an explorative case study. No use is made of a case study as a falsification method with the purpose of testing hypotheses.

To create a clear view on the role of governance modes and their influence on environmental (in)justice outcomes, this research made use of a comparative case study by comparing two cases with different

governance modes. The comparison of two projects with different governance modes provided information on what influences on the outcomes of Nature-based Solutions in projects were due to their governance structures, and what is caused by external factors. Not only resulted this comparative case study in a comprehensive overview on environmental (in)justice outcomes of the two projects, it also offered possibilities to create an overview on the (dis)advantages of different governance modes used for such projects.

3.1.3 Case selection

For the selection of the cases, theory-based sampling is used. Theory-based sampling involves selecting cases that represent important theoretical constructs about the phenomenon of interest. This sampling method can be used to select cases which include constructs in which one is interested (Suri, 2011). The concepts emerging from the theory are the main constructs for the selection of the cases with this form of sampling. Theory-based sampling is used for this research for the fact that this study aimed to compare two cases which differ in their governance structures. Governance structure as a theoretical concept hereby functions as the main instrument by the selection of these cases.

The cases used for this study are selected with the use of explorative interviews, to get a view on the governance structures of different cases. Explorative interviews made it possible to find out whether certain cases are suitable to be used for this research. The main aim of this phase was to find two cases which differ from each other in their governance structures.

With the use of these explorative interviews on the one hand, and document analyses of several projects on the other, the governance structures of all selected projects were determined. With the use of the operationalization of the governance structures as described previously, it was possible to create questions useful for the analysis of documents and the conduction of exploratory interviews. During this analysis, it became clear that the project concerning the Hondsbossche Dunes consisted of a *decentralized governance* structure where the contractor company is purely hired to design and construct the decision made by the decentralized partners (Boskalis, n.d.-a). The project concerning the Markermeer Dikes on the other hand, is characterized by its *public-private governance* structure (Boskalis, n.d.-b), consisting of an alliance between the contractor company of Boskalis and the water board Hoogheemraadschap Noord-Holland.

Other than the differing governance structures of both projects, the fact that both projects are located in the same province played another important role for the decision to select these cases. Being located in the same province, both projects were taken care of by the same public parties which makes it so that contextual factors were less likely to influence the relationship between the governance structures and environmental justice outcomes of both projects.

3.2 Research methods

To achieve the main aim of this research, it was essential to gain a clear overview of reasons why and how environmental justice emerges as a consequence of governance modes. It was therefore important to collect data with the use of in-depth interviews and to provide relevant actors with the opportunity to explain their experiences and insights on the concepts of environmental justice and governance structures.

The first step was to clearly define both cases in terms of governance structures. The use of document analyses and explorative and in-depth interviews made it possible to define the governance structures of

both cases by looking for elements that characterize governance modes as described in the theoretical framework. For this thesis, several explorative interviews have been conducted to create an overview of the governance structures of several projects. After finding two cases that seemed suitable for a comparative case study, additional in-depth interviews and document analyses have been conducted in order to further analyze and confirm their governance structures.

The next step of the research was the stakeholder analysis. After defining the projects, it was important to get an overview of the relevant actors from both projects. For this research, an initial stakeholder analysis is created with the use of documents on the chosen projects. During the phase of conducting interviews, many more relevant parties came up and supplemented the stakeholder analysis.

Third, relevant parties within the project have been approached to conduct interviews with. These interviews have been useful in order to find out the projects' strategies around recognizing and including stakeholders and other relevant parties in their decision-making process. Other than that, the consequences of the projects were clarified during these interviews.

The fourth step consisted of the conduction of interviews with relevant parties which were considered as actors facing consequences of the project in any way. People facing negative impacts of the projects are found with the use of newspaper articles or via the website of the Dutch 'Council of State'. Interviews with these actors clarified their interests, the extent to which they and their interests have been included in decision-making processes, and the consequences of the project as experienced by them. Interviews with these people are used to validate the already collected findings and the causal relationship with the projects' governance structures, and provided new information on the extent to which environmental justice is influenced by the project. The sum of all explorative and in-depth interviews consisted of 15 interviews.

During the data collection phase, both projects' locations are visited to get a clear view on the outlook of the projects. This field trip provided opportunities to make photos of the locations and to get a visualization of the information gathered from the interviews and documents. A visualization of the projects and their areas made it easier to understand, and with that, remember, the information gathered within the data collection phase of this research.

3.2.1 Document analysis

As made clear in the previous paragraph, the data has been collected with the use of interviews and document analyses. It is important to get a comprehensive view on how these methods work prior to the actual data collection phase.

A document analysis is a systematic procedure for reviewing or evaluating documents. Documents can be seen as 'social facts' (Atkinson & Coffey, 1997), containing text and images that have been recorded without a researcher's intervention. Document analyses are often used in combination with other qualitative research methods as a means of triangulation. Document analyses involve skimming, reading, and interpretation. The researcher should demonstrate the capacity to identify pertinent information and to separate it from that which is not pertinent. With a thorough analysis of documents, the process involves a careful, more focused re-reading and review of the data in which the researcher takes a closer look at the selected data and performs coding and category construction. Predefined codes can be used, especially when the same codes are also used in other research methods such as interviews. By coding

the document, the researcher aims to demonstrate objectivity and sensitivity in the selection and analysis of data from documents (Bowen, 2009).

It is not only of essence to analyze the content of documents, the original purpose of documents should also be taken into account during the analyzation process. Information about the author of the document and the original sources of information could be helpful in the assessment of a document (Bowen, 2009).

The first step of a document analysis is to gain a balanced document selection. The researcher should determine the extent to which documents contain balanced information on the subjects relevant for the inquiry. In the end, it should not be the case that the sum of documents contains a lot of information on only a small number of subjects, and that some subjects are either described to a small extent, or not even at all. The selection of documents should also be balanced between both projects. It is of great importance that the selection of documents is similar for both projects in terms of both the number and the nature of documents. A significant difference in either the number or the nature of documents can influence the results of the document analysis.

For this thesis, documents on both projects are analyzed in order to supplement the data gained from interviews on the one hand, and to look at data gained from interviews from a different perspective on the other. The documents are selected, read, and coded based on the relevant information that could be found in these documents. Therefore, some documents are merely scanned and analyzed by coding only a few sentences. Other documents have been read and coded more explicitly, depending on the documents' contents.

As shown in the table, there are slightly more different documents analyzed on the project of the Markermeer Dikes when compared to the Hondsbossche Dunes project. There are two main reasons for this. First, less relevant information was collected through interviews on the Markermeer Dikes project when compared to the project of the Hondsbossche Dunes. Therefore, more information had to be gained with the use of other methods, such as document analyses. Second, the project of the Markermeer Dikes is currently being implemented, whereas the project of the Hondsbossche Dunes is already finished for several years. As a result, more documents on the Markermeer Dikes project are available when compared to the Hondsbossche Dunes project.

Hondsbossche Dunes	Markermeer Dikes
MER (environmental effect report)	
Articles project team (on their website, in newspapers etc.)	
Articles relevant associations (on their websites, in newspapers etc.)	
Process evaluation projects	
Documents and presentations on participation meetings	
Documents on explorations and decision-making processes of dike enforcement alternatives	
Project plan	
Research on environmental management and participation within the project	Plans of action to include relevant actors
	Documents on regulations for spatial quality

3.2.2 Semi-structured interviews

Semi-structured interviews are often used to collect data because of two main considerations. First, semi-structured interviews are well suited for the exploration of the perceptions and opinions of respondents regarding complex and sometimes sensitive issues and enable probing for more information

and clarification of answers. Second, the varied professional, educational and personal histories of the sample group precluded the use of a standardized interview schedule (Barriball & While, 1994).

Semi-structured interviews include closed- and open-ended questions, often accompanied by follow-up 'why' or 'how' questions. To prepare for a semi-structured interview, an interview guide needs to be created. This interview guide consists of an outline of planned topics, and questions to be addressed, arrayed in their tentative order. When multiple semi-structured interviews are conducted for different groups, interview guides need to be tailored to each group (Newcomer et al., 2015).

For this thesis, two types of interview guides are created. The first type of interview guides were assigned for interviews with project partners (see Appendix A). The second type of interview guides were used to interview other relevant parties for the projects (see Appendix B). All interview guides got adjusted based on the precise role of the respondents. The interview guides research consisted of a number of questions regarding information on the respondent him- or herself, and of suggestive questions which could be asked on topics related to this thesis' investigation. The interview guides were used as guidelines to ensure that all subjects would be discussed on the one hand, and to suggest questions when needed on the other. Overall, the interviews started off with a question from the interview guide, and continued with more questions based on the answers of the respondent.

3.2.3 Coding

After the conduction of semi-structured interviews, the interviews needed to be transcribed and coded. Coding can be described as the 'critical link' between data collection and their explanation of meaning (Charmaz, 2001). During a coding process, one applies and reapplies codes to qualitative data. A code is often a word or short phrase that symbolically assigns a summative salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data (Saldaña, 2013). With coding, different researchers can make use of different filters when coding qualitative data. When a researcher makes use of 'In Vivo Coding', the participant's own language is used as a code. Hereby, the codes exist of the word or words said by the participant. Another researcher might choose to use codes that describe the essence of the data. With this filter of coding, called 'Descriptive Coding', the breadth of opinions stated by multiple participants is documented and categorized. At last, a researcher may choose to employ 'Values Coding' to capture and label subjective perspectives (Saldaña, 2013).

The coding process got continued with a process of analysis. Analysis can be described as 'the search for patterns in data and for ideas that help explain why those patterns are there in the first place' (Bernard, 2011). Coding can contribute to an analysis by enabling a researcher to organize and group similarly coded data into categories because they share some characteristic – the beginning of a pattern (Saldaña, 2013). It is important to state that the aim of coding is not to find the same topics in all interview texts, but will be useful for the following stages in the analysis to note any marked similarities and differences between interviews (Schmidt, 2004). Both classification reasoning and the researcher's tacit and intuitive senses to determine which data 'look alike' and 'feel alike' when grouping codes together have to be used (Lincoln & Guba, 1985). After the first cycle of coding, it is likely that codes will be subsumed by other codes, relabeled, or dropped altogether during a second cycle of coding. After the final codes are divided into categories, categories can be compared with each other and consolidated in various ways to create themes and concepts which could lead to the development of theory. With the final result of the coding process, conclusions can be drawn and research questions can be answered (Saldaña, 2013). When coding, particular passages in the text of an interview have to be related to one category, in the

version that best fits these passages. It is very important that the descriptive labels are formulated distinctively, so that there will be no overlap (Schmidt, 2004).

For this thesis, descriptive coding is used. Multiple documents and interview transcripts from both projects are coded with the use of Atlas.ti. The first step within this coding process was to describe the essence of the qualitative data in forms of codes. During the second cycle of coding, some codes got reformulated, deleted or merged with similar codes. After coding all qualitative data, codes got divided into categories based on the operationalization of theoretical concepts used for this research. These categories then got analyzed in order to answer the research questions. The categorization of codes also functioned as a way to add to the theories of this thesis. With some codes not belonging to certain categories, new categories got created and/or existing categories got reformulated. As a consequence, the theoretical framework used for this study could be improved and supplemented due to new insights gained from the coding process.

The next step after the coding process involved the analysis of the results in the form of tables. Tables provide an overview of frequencies of codes in individual analytical categories. From this overview, categories could be selected and related to documents and interview transcripts in the form of code-document tables. With the provision of a clear overview of code categories and how they were distributed among the documents and interview transcripts of both projects, the use of such tables contributed to a well-organized analysis.

The last stage of the interview analyses consisted of interpretations of the detailed cases with the use of the formulated codes and their code groups. The goals of this stage might be the discovering of new hypotheses, or the testing of already existing hypotheses (Schmidt, 2004). With this study being an explorative research, its main aim was to explore the relationship between governance structures and environmental justice issues. Interpretation of the cases were therefore mainly to explore relevant correlations. That being said, this stage mainly focused on the discovering of new hypotheses, rather than testing already existing hypotheses.

3.2.4 Stakeholder analysis

A stakeholder analysis is an approach, a tool or set of tools for generating knowledge about actors – individuals and organizations – so as to understand their behavior, intentions, interrelations, and interests; and for assessing the influences and resources they bring to bear on decision-making or implementation processes (Varvasovszky & Brugha, 2000). A stakeholder analysis can therefore be of value in the preparation process of the analysis on how actors of the two cases are influenced by the project.

The first step of the stakeholder analysis was to identify relevant actors and to map these in relation to the issue, as well as to each other. These actors can include individuals, organizations, different individuals within an organization, and networks of the individuals and/or organizations (Varvasovszky & Brugha, 2000). Like for the document analysis, it was of importance that the selection of interview respondents would be balanced. It was also important that actors with similar roles within both projects were approached. Relevant parties of both projects could be divided into actors in the sectors of the state, market, and civil society.

Actors within the sector of 'state' include the various levels of government: bureaucracies organized often as departments of ministries; state-appointed bodies such as the judiciary, regulatory boards and

councils; agencies that provide public services, such as housing and economic development; and government-controlled enterprises such as utilities, education systems and health care institutions. 'Market' organizational forms can be public corporations, private companies, private partnerships, proprietorships, and franchises. 'Civil society' includes non-governmental organizations, people's movements, citizens' groups, consumer associations, religious institutions, women's organizations, and indigenous people's associations (Waddel & Brown, 1997).

The table below shows which actors got considered as relevant actors, and were therefore approached to conduct interviews with. The interviewed actors are in bold, which shows that not all relevant actors are conducted interviews with. For the un-interviewed actors whose roles are relevant for this thesis, information on their roles is gained with the use of interviews conducted with other parties on the one hand, and the analysis of relevant documents on the other.

Sector	Hondsbosscche Dunes	Markermeer Dikes
State	Hoogheemraadschap Noorderkwartier	Hoogheemraadschap Noorderkwartier
	Province of North-Holland	Province of North-Holland
	Rijkswaterstaat	Rijkswaterstaat
	Municipality/municipalities	Municipality/municipalities
Market	Boskalis	Boskalis
	Van Oord	VolkerWessels
Civil Society	Interest groups <ul style="list-style-type: none"> • Nature interest groups • Cultural interest groups • Representatives of inhabitants 	Interest groups <ul style="list-style-type: none"> • Nature interest group • Cultural interest group • Representatives of inhabitants
	Recreational entrepreneurs	Recreational entrepreneurs
	<i>(bold: interviewed parties)</i>	

3.2.5 Gathering interview respondents

Seeking relevant parties to approach for interviews is in the first place done by looking into documents and websites in order to find names of actors involved within the projects. Documents and websites on the projects often contain names and/or contact details of actors involved in these projects. Using this data, relevant parties were approached to conduct interviews with. Another method used to find relevant actors was by contacting their organizations with the use of contact details of those organizations on their websites.

During the conduction of the first interviews, other relevant actors were found by using the 'snowballing' technique (Raworth et al., 2012). With this technique, the researcher asks each interview respondent to suggest other people to talk to. It is hereby of importance to ask respondents to suggest diverse people in order to reduce the risk that the researcher only meets people within one social network (Denscombe, 2010). This technique is used for this study several times. Multiple respondents were approached with the use of contact details gained from documents and websites on the projects, and all interviews ended with the question whether the respondents would happen to know other relevant actors to conduct interviews with. By approaching multiple respondents via their websites and documents as a start and making use of the snowballing technique after, multiple 'snowballs' got created, with the result that people in different social networks could be engaged to conduct interviews with.

3.3 Validity and reliability

3.3.1 Validity

Validity knows many forms. However, the main types of validity are internal and external validity.

Internal validity can be described as the extent to which the researcher has measured the effect he intended to measure. The extent to which internal validity is achieved is based on whether a theoretical construct is operationalized correctly and whether the presupposed relationship actually exists (van Thiel, 2014). Internal validity can be assured by using appropriate strategies, such as triangulation, prolonged contact, member checks, saturation, reflexivity, and peer review (Mohajan, 2017).

External validity refers to the extent to which a study can be generalized. This type of validity is especially important for researches which use the results of the sample to arrive at statements on the population as a whole (van Thiel, 2014). The external validity of a study can be increased by achieving representation of the population through strategies, using heterogeneous groups, using non-reactive measures, and using precise description to allow for study replication or replicate study across different settings (Mohajan, 2017). As explained previously, Flyvbjerg (2006) showed that a case study can also be used to generalize, but in forms of falsification, rather than verification. This means that a representative group is not necessarily needed in order to create generalizations. Since the PAA-approach used in this thesis is universally applicable, the outcome of this thesis could be considered generalizable for worldwide coastal areas in which Nature-based Solutions are implemented as coastal protection strategies.

Within this research, internal validity is assured using the strategy of data source triangulation. Data source triangulation involves the collection of data from different types of people, including individuals, groups, families, and communities, to gain multiple perspectives and validation of data (Carter et al., 2014). Within this study, data on environmental (in)justice issues is collected by interviewing members of the project teams, organizations included within the projects, and individuals facing consequences of the projects. By collecting data from these different sources, internal validity is assured.

The external validity of this study is increased by replicating one study in two different settings. With the use of a comparative case study, this research used the same methods in two different cases which increased the external validity of this research.

3.3.2 Reliability

The reliability of a study then refers to the accuracy and the consistency with which the variables are measured. Accuracy refers to the measurement instruments that are used, such as questionnaires or observation schemes. The variable to be measured should be captured as correctly as possible. The element of consistency revolves around the idea of repeatability. Under similar circumstances, another researcher should provide the same result when using the same measurement methods. The reliability of a research can be increased by writing items clearly, making test instructions easily understood, and by making the rules for scoring as explicit as possible (van Thiel, 2014). Feedback from other researchers can be used to assure the reliability of the measurement methods (van Thiel, 2014).

When using semi-structured interviews as method to collect data, it can be difficult to achieve consistency and accuracy. It is therefore important to explain all the decisions made through the data collection and analyzing process.

4. Analysis

4.1 The projects

4.1.1 Hondsbossche Dunes

The Hondsbossche and Pettemer seawall got rejected in 2004 and became part of the program 'Zwakke Schakels Noord-Holland' (the weak links of North-Holland), a dike enforcement program including several coastal areas of North-Holland (Betten et al., 2013). The Hondsbossche and Pettemer dike did not meet the safety requirements and therefore, needed to be enforced. The dike got rejected based on its lack of stability, grass cover, and wave overtopping. This rejection resulted in the task to create a new dike that would not only ensure water safety for a period of 50 years, but also improve the spatial quality within the area. HHNK, RWS, and the province of North-Holland worked together to create an alternative which would meet the demands of the new area. There were several possible alternatives which could be divided into three main groups (Provincie Noord-Holland, 2012):



- Seaward: seaward alternatives are those aiming towards sand retention and replenishment. Such measures reduce the risks of overtopping waves and erosion due to storms. Seaward alternatives are often considered as win-win situations in which possibilities for nature, economy, and recreation are realized within the area.
- Consolidating: consolidating alternatives consist of a widening and/or raising of the already existing dike. Consolidating alternatives are alternatives that are frequently used with dike enforcement projects in the past and are therefore considered as the 'more traditional' alternatives. For the area of the Hondsbossche Dunes, a consolidating alternative would need a dike increase of 2.5- 6.5 meters, and a widening of 10-40 meters, depending on the location. Consolidating alternatives are considered as successful due to the great amount of experience on these types of alternatives. However, since these alternatives are merely an improvement of the already existing dike, they do not result in new possibilities for economic or ecological purposes.
- Inland: inland alternatives are alternatives that require space inland. The focus with inland alternatives is less on the prevention of water going over the dike, but more on the adaptation of the land inside of the dike to this water. With the thinly populated area behind the Hondsbossche and Pettemer seawall, a possible alternative would be the alternative of a flood-resistant dike. This alternative could lead to seawater going over the dike during storms, without resulting in a situation in which the dike and the land behind it being damaged by it. Incidental amounts of water going over the dike may be of value for ecological areas inlands of the dike.

Due to the possibilities for ecology, economy and recreation (Smit et al., 2015), the project team decided to go for a seaward alternative. In 2015, the Hondsbossche and Pettemer seawall in the province of North-Holland, between the villages of Camperduin and Petten, got strengthened with 35 million cubic meters of sand (Klimaatbuffers, n.d.-a). This replenishment of new sand within the area resulted in a new landscape which is now known as the 'Hondsbossche Dunes'. The area transformed from a coastal area with a 'hard' dike to a completely different coastal area with a large beach in front of it. The aim of the project was to bring more safety in the vulnerable coastal area and to create an environment in which new ecological, economic, and recreative possibilities could be introduced. The project was finished in 2016 and ecological developments within the area were analyzed to gain new knowledge on these kind of implementations (Klimaatbuffers, n.d.-a).

Due to positive reactions on the project, a similar project has been implemented on the coastal area of Texel. Instead of a 'traditional' dike enforcement, the Prins Hendrikzand Dike on the island of Texel is enforced with the use of 200 hectares of habitat (Bouma, 2019). The project on the Hondsbossche Dunes is considered as a 'revolutionary' and created ideas for other projects to make use of a similar approach.

4.1.2 Markermeer Dikes

The other side of the province of North-Holland is currently facing the implementation of another project, the project of the Markermeer Dikes. Out of the tests of these dikes in 2001 and 2006 got concluded that the Markermeer Dikes did not meet the safety standards and therefore had to be reinforced (Alliantie Markermeerdijken, n.d.-b). These conclusions resulted in a project consisting of a dike reinforcement of 33 kilometers on the east coast of the province of North-Holland. This 33 kilometers of dike reinforcement got divided into 15 small projects from which different solutions for each project got determined (Alliantie Markermeerdijken, n.d.-d).



One of the trajectories of the Markermeerdijken is the trajectory around the city of Hoorn. For this trajectory, there were two possible alternatives which would meet the new safety standards (Alliantie Markermeerdijken, 2017):

- An outward shift of the dike's axis: this alternative consists of a shift of the dike with a raise of the dike included. Even though this alternative would ensure water safety in the city of Hoorn, it would need a rebuilding of the dike.
- A shore dike: a shore dike can be described as a low lying dike implemented in front of the already existing dike (Alliantie Markermeerdijken, n.d.-c). The benefits of such a solution is that the monumental values of the existing dike remain intact. Also, a shore dike offers extra possibilities for recreation, ecology, and economy (Alliantie Markermeerdijken, n.d.-a).

The decision for a nature-based solution in forms of a shore dike to ensure water safety was made by the HHNK before the existence of the alliance. The final decision to go for a shore dike was based on the facts that 1) this solution would not harm the monumental value of the existing dike, and 2) a shore dike would offer more possibilities for natural and recreational development.

These recreational possibilities are realized with the implementation of an additional so-called 'urban beach' between the shore dike and the existing coast of the city of Hoorn. This urban beach has a length of 1 kilometer along the coast, and is 130 meters wide (Weessies, 2019). As the area is expected to become more attractive for recreants as a result of this urban beach, the municipality realized a road for cyclists and pedestrians on the dike, and created new parking lots so that the urban beach would become more accessible for recreants.

The shore dike and its additional urban beach is currently in its implementation phase and it is expected that the shore dike will be finalized at the end of 2021. For recreants, the urban beach will be accessible from summer 2022, and the urban beach will be completed with facilities in the following years (Oms Westfriesland, 2019).

The project faces a lot of complexities. First of all, the surface on which the Markermeer Dikes are located is known for its weak surface. The areas surface can even be considered as the 'weakest surface of the Netherlands' (Interview 6, Province North-Holland (B), November 2020). Due to this complexity, many tests had to be done in order to investigate the possibilities for dikes on this surface, which took a lot of time. Another complexity of the project is that during the planning phase of the project, new instruments got introduced to measure the safety of the dike. These new instruments came with new requirements for dike enforcement which were not always correct (Interview 6, Province North-Holland (B), November 2020). These complexities made it so that the start of the implementation of the project had to be delayed.

4.2 Governance structure

The Policy Arrangement Approach (PAA) is used to determine the governance structures of both projects. The PAA consists of the concepts of actors/coalitions, power/resources, rules, and discourses. For this research, the PAA is used to determine the governance structures of both projects. Therefore, the analysis of this thesis starts with the findings done on the different aspects of the PAA so that the governance structures are clarified.

4.2.1 Hondsbossche Dunes

Actors

The initiating actors within the project about the Hondsbossche Dunes are the water board Hollands Noorderkwartier (HHNK) and Rijkswaterstaat (RWS). Since these parties are responsible for water safety in the Netherlands (Interview 4, RWS, November 2020), they got assigned as leading actors for the project. The initiating actor of the project was HHNK, and as soon as the project aimed towards a seaward solution, RWS got involved as the second leading actor of the project. RWS is the administrator of the Dutch North Sea area (Interview 4, RWS, November 2020). As soon as HHNK decided to make use of a seaward solution with sand replenishments, RWS decided that they had to be more actively involved within the project and became the second leading actor (Interview 6, Province North-Holland (B), November 2020). A third important party within this project was the province of North Holland. The province did not function as a leading actor within the governance structure of the project, but as authorized supervisor for the permits (Interview 6, Province North-Holland (B), November 2020). The values of the province were mostly focused on adding spatial quality in forms of possibilities for nature and recreation, whereas the values of RWS and HHNK were mainly based on ensuring water safety (Aukes, 2014).

Other actors that were involved in the project to a lower extent, were the municipalities and nature organizations situated in that area. These parties were involved within the decision-making in forms of cooperation agreements with the project partners. Cooperation agreements between parties were needed in order to add elements to the project (interview 2, HHNK (B), October 2020). This way, municipalities and nature organizations were able to share their input in the completion of the area.

Another important actor within the project were the contractors. The project's contractors were private sand suppliers who got selected to carry out the project based on a so-called 'competitive dialogue', in which contractors competed with each other on which idea seemed to be the most successful in the area (Interview 2, HHNK (B), October 2020). The chosen contractor was the contractor's combination of Boskalis and Van Oord which got chosen for the fact that they would add extra spatial quality to the area by, for example, the realization of a lagoon for touristic purposes, a panorama dune, and a work of art in Petten (Boskalis, n.d.-a). The province had financial resources available for this lagoon since this would add spatial quality to the area (Interview 4, RWS, November 2020).

Power/resources

As leading parties of the project, HHNK, RWS, and the province were responsible for the project's outcome and were therefore provided with possibilities to make final decisions. HHNK was even a bit more powerful than the others for the fact that the HHNK, as initiating party, was legally responsible for the final decisions that had to be made (Interview 4, RWS, November 2020). However, with RWS functioning as the administrator of the North Sea, and HHNK as the responsible party for enforcing dikes, a seaward solution overlapped both of their responsibilities. With their shared leadership, HHNK and

RWS decided to handle all issues together, as a team. According to a respondent from RWS, *“it felt as a shared responsibility to cooperate, so that is what we did”* (Interview 4, RWS, November 2020).

Power and resources are strongly linked to each other. Resources are likely to determine the power of parties. That is not different within the governance structure of this project. The responsibility of HHNK and RWS emerged from the fact that they were provided with the financial resources from the ‘Hoogwaterbeschermingsprogramma’ (HWBP). HWBP is a program with the purpose to ensure water safety in the Netherlands, consisting of financial contributions of all water boards in the Netherlands and RWS. The project of the Hondsbossche Dunes is financed by the second HWBP, named HWBP-2. This program contains all dike enforcement projects that result from rejected dikes between 2001 and 2006 (HWBP, 2011). Before the existence of HWBP, finances for the project came from the ministry via RWS. This made it so that RWS was the only financial contributor to the project in the first phase. After the financial resources from HWBP-2 got introduced, RWS and HHNK were both assigned as financial partners of the project. For a regular dike enforcement project, it is possible for water boards to get a subsidy from the HWBP program of 90% of the costs for the project. 50% of the costs are covered by RWS, and 40% is covered by the union of water boards. The remaining 10% of the costs are covered by the concerning water board of the project’s area (HWBP, n.d.) A respondent from HHNK made clear that the financial resources coming from the HWBP-program provided power for HHNK and RWS to make decisions about water safety in the area (Interview 1, HHNK (A), September 2020). The only objective was that these resources would result in water safety that needed to be assured by HHNK and RWS. The financial resources did not aim towards a specific method to assure this water safety, which made it so that the alternatives for the project remained debatable.

Other finances of the project came from the province and municipalities since they were able to add spatial quality to the area, but only as soon as they financed it themselves. However, finances from municipalities and the province were not needed for the assurance of water safety, but were used to add extra values to the area.

Rules

Decision-making

For the consideration of alternative options, a Multi-effect report (MER) was used. This report consisted of a measurement of different alternatives in which multiple criteria were tested. The creation of a MER resulted in the decision of an alternative. The MER showed which solution is considered as the most environmental alternative (MMA) and this solution would be realized. The chosen alternative for this project was the sandy solution in forms of the Hondsbossche Dunes. This decision was made on both the result of the MER and the requirements of the province in terms of spatial quality. Other aspects that influenced the decision for a seaward solution with the use of sand replenishments were the following (Betten et al., 2013):

- The solution would be the most flexible alternative, due to the fact that it could easily be expended
- Sand would be future-proof, since it leaves room for adaption based on future uncertainties
- Since sand replenishments keep the sea far away from the coast, the alternative would lead to a great sense of security
- Compared to other alternatives, the seaward alternative would take the least time to secure water safety.

Even though the alternative for a sandy solution seaward came out of the MER as the most environmental alternative, it is questionable whether this is actually the case. According to several interview respondents (Interview 13, Faunabescherming, January 2021; Interview 14, Vogelwerkgroep Alkmaar, January 2021), the mitigation measures as carried out by the project team were unsuccessful which makes the functioning environmental legislations for the biodiversity questionable. This will be elaborated more in the further parts of this analysis.

Public participation

In terms of participation, the project had to be supported by inhabitants and other relevant parties of the area. It was therefore necessary that the values of all relevant actors got taken into account to ensure that the outcome of the project would be supported by its environment. Formal regulations on participation are that relevant parties were able to let themselves hear in participation procedures, as soon as the draft of the project got finished. *“These kind of trajectories always get followed by a participation procedure in which the final project design gets shared with the inhabitants of the area. During this procedure, everyone is able to share their view on the project’s outcome”* (Interview 5, Province North-Holland (A), November 2020).

When parties at this participation procedure did not agree with the final project plan or with the extent to which their interests are taken into account, they got provided with the possibility to object at the Council of State. The Council of State is an official authority consisting of two divisions. The Advisory Division is the division advising the government and Parliament on legislation and governance, while the Administration Jurisdiction Division is the country’s highest general administrative court (Raad van State, n.d.). The latter is the division relevant for public participation since it, during projects such as the Hondsbossche Dunes, provides the possibility for parties to object to the decisions made by the governmental actors. For this procedure, the objecting actors are not obliged to hire a lawyer. However, they are provided with the possibility to do so on the condition that they finance this lawyer themselves (Raad van State, n.d.). The Council of State either approves or rejects the objections done by these actors. As soon as the Council of State approves these objections, the project plan has to be revised. The existence of the Council of State results in a project outcome which is supported by its environment.

Water Safety

For the Hondsbossche Dunes and other dike enforcement projects which the HWBP-2 program consists of, the dike enforcement needed to be ‘sober, robust, and effective’ in order to be eligible for funding. Sober and effective refer to the need for the project’s efforts to actually contribute to the safety of the project’s area at the lowest costs. Robust refers to the need of the project’s outcome to last long (Betten et al., 2013). The outcome of the project had to meet the water safety standards concerning a flood probability of 1/10.000 a year for a period of at least 50 years (Betten et al., 2013).

Nature conservation

With both the polder inland and the North Sea seaward, the Hondsbossche Dunes are located between Natura-2000 areas. Regulations for these areas state that it is not allowed to harm the natural values of these areas. It is also required that spatial changes in surrounding areas of the project appear as Natura-2000 areas as well. For the Hondsbossche Dunes, this means that the projects’ outcome needed similar characteristics as its surrounding Natura-2000 areas (Interview 13, Faunabescherming, January 2021). Also, decisions including spatial changes towards Natura-2000 areas needed to be tested by using ADC-criteria. The project team was allowed to realize spatial changes in or towards Natura-2000 areas as soon

as there were no alternative options (A), there would be a compelling reason for these changes (D), and necessary compensating measures were executed (C) (Interview 5, Province North-Holland, November 2020).

Other legislations within the Natura-2000 program are the conservation objectives of the Wadden Sea. These objectives are the aimed amounts of flora and fauna that need to be conserved in the Wadden Sea. Projects around areas such as the Hondsbossche Dunes have to deal with these objectives when types of species with a large population around the Wadden Sea area found in the project area (Natura 2000, n.d.). As soon as the number of those species in the area decreases significantly due to the projects' activities, the project partners are obliged to carry out mitigating measures.

The Hondsbossche Dunes projects created a situation in which the 'hard' substrate in forms of a dike transformed into the 'soft', sandy dunes. This transformation would result in disappearing birds within the area. Many of the existing bird species would face negative consequences as a result from the project. However, the decreasing numbers of turnstones and oystercatchers within the area were the only significant losses, according to the conservation objectives of the Wadden Sea. Therefore, the project partners were obliged to carry out mitigating measures for these species (Karman et al., 2013).

Landscape and cultural history

In the province's policy framework concerning landscape and cultural history, the province indicated what elements should be considered by realizing spatial developments. The Hondsbossche Dunes project, the landscape type of 'young dunes' was applicable. One of the most important elements of this landscape type are the transitions from the dunes to the beach plains, and those from the dunes to the open polder lands. These transitions are important for the identity of the project's area and it was therefore needed to keep them intact (Gemeente Schagen, n.d.).

Spatial regulations

A spatial regulation for the project team is that it was impossible for them to remove something from the projects' area. HHNK was legally obliged to bring back everything that existed before the implementation of the project. A respondent from the province provided an example to illustrate this legislation: *"when a parking space would disappear under sand, it needs to be brought back to the area by the HHNK"* (interview 6, Province North-Holland (A), November 2020).

Other spatial regulations are the destination plans for the area. The project's area consists of the following destinations (Gemeente Schagen, n.d.):

- Urbanization in rural areas: urbanization in rural areas is only allowed when (a) the urgency of this urbanization can be proven, (b) there are no possibilities to realize this urbanization by intensifications, combinations, or transformations within the existing built-up area, and (c) the spatial quality demands are taken into account. For the project of the Hondsbossche Dunes, urbanization in rural areas was realized in forms of beach buildings. These construction of these buildings was approved upon since they were in line with the demands mentioned above.
- Blue space: it is forbidden to realize buildings in the area consisting of 100 meters dike-inward, and 175 meters outside the dikes. The only exceptions on this regulation occur when (a) the water board considers these buildings to be the consequence of non-reversible developments, (b) a future landward enforcement is not hindered, and (c) the buildings can be adjusted on the

North Sea level. Additionally, the province set frameworks for beach pavilion allowed at the coastal zone. These beach pavilions are only allowed to be realized in particular areas.

- Geologically valuable areas: some parts of the project's area are considered as geologically valuable areas due to their educational and scientific values. Therefore, it is forbidden to physically affect such areas.
- Ecological main structure: the area which is assigned as the ecological main structure is valuable for its function for nature and is therefore considered as a protected area.

The final plans for the Hondsbossche Dunes project were not contrary to these spatial regulations.

Discourses

Nature-based Solutions

The project partners mainly considered the project's outcome as the best alternative to solve the water safety issue in the area. The decision for sand nourishments in order to enforce the coastal area was mainly based on the arguments that it had the least negative consequences for the surrounding area, and that it added extra spatial quality in forms of ecological and recreational possibilities. Overall, the project partners were positive on the final result of the project.

One of the respondents from the HHNK (Interview 1, HHNK (A), September 2020) pointed out that a lesson learned during this project was that it is important to think in ecosystems, rather than ecological targets. Ecological targets are targets set by the EU to incentivize governments to include ecosystems in their projects concerning spatial development. According to this respondent, thinking in ecological targets would make the achievement of these goals the main objective, whereas it would be better to consider the maintaining of the existing ecosystems as an objective. The respondent illustrated this way of thinking with an example of dunes. The ecosystem targets steer towards an area in which there is a specific percentage of white dunes, and a specific percentage of brown dunes. Respondent 1 explained the following: *"it is important to keep the European ecological targets in mind, but it should not be the main objective. Thinking in values for ecosystems within the area makes it easier to understand and achieve the European targets and with a better understanding of the purposes of these targets, it is easier to explain the decisions made"* (Interview 1, HHNK (A), September 2020).

With the growing awareness of the values of Nature-based Solutions, discourses on such solutions increase. This was no different with the project on the Hondsbossche Dunes, where new employees with high functions within related organizations (HHNK and RWS) were more enthusiastic on the use of sand nourishments in order to enforce coastal areas due to their personal background. So was the new dike earl (hired in 2009) of HHNK familiar with sandy environments which made the use of sandy solutions debatable (Aukes, 2014). Along with other new employees who considered the use of sand as a realistic solution, discourses on the use of sandy solutions for dike enforcement increased.

Environmental values

When looking at other environmental values, there are two main groups under which the discourses on these values can be divided. On the one hand, there are those who focus on the possibilities of the projects to create new environmental values. On the other hand, there are those focusing on the negative consequences of the project on such environmental values. The first group mainly consisted of actors steering the project, such as the province and the HHNK, and those valuing the consequences of the project, such as the organizations for the development of dunes. Actors within the project team had

a strong focus on how new environmental values could be improved due to the project when discussing environmental values. Environmental aspects they focused on were for example how a new wet dune valley could be created to create new areas for ecological development (Smit et al., 2015). The other group consists of people who were concerned with the negative consequences of the project for the already existing environmental values of the area. Actors within these groups experienced the original situation as a beneficial area for the environmental values and did not like these to be harmed. These actors are for instance those who considered the 'hard dike' which existed prior to the Hondsbossche Dunes as a valuable habitat for birds, which disappeared with the creation of the dunes (Interview 13, Faunabescherming, January 2021).

Participation

In terms of participation, the project partners felt responsible to include values of all relevant actors within the project's area. Multiple interview respondents (Interview 1, HHNK (A), September 2020; Interview 5, Province North-Holland (A), November 2020; Interview 6, Province North-Holland (B), November 2020) made clear that the decision for this alternative was based on the societal support of this decision. A respondent from the HHNK (Interview 1, HHNK (A), September, 2020) stated that all values of relevant actors were included within the MER. A respondent from the province (Interview 6, Province North-Holland (B), November 2020) illustrated the value of public participation by stressing the need for public participation in order to get the project plan approved. The province and HHNK explained that they felt obliged to gain as much societal support as possible since they are public organizations from which the boards are chosen democratically (Interview 5, Province North-Holland (A), November 2020; Interview 1, HHNK (A), September 2020). This obligation for societal support motivated the project partners to realize as much possibilities for public participation as possible. Overall, the interviewed project partners were satisfied on the participation within the project of the Hondsbossche Dunes and shared the idea that the values of the parties concerned with the project's area got taken into account in an equal way. This does not mean that everyone needs to agree to the decisions made, but that they are able to understand the reasoning behind the final decisions. As a respondent from the HHNK stated: *"The aim is not per se to agree with each other, but to be able to shake each other's hand or drink a beer together at the end of the conversation"* (Interview 6, Province North-Holland (B), November 2020).

Governance structure

With the powers and responsibilities divided over the multiple public parties of HHNK, RWS, and the province, the relatively small role of the private contractors in the decision-making processes, and the use of multiple formal rules, the characteristics of the Hondsbossche Dunes project reflect those of the 'decentralized governance' concept as defined by Driessen et al. (2012).

4.2.2 Markermeer Dikes

Actors

The main actors at the Markermeer Dikes project were HHNK, the contractors of Boskalis and Volkerwessels, and the province of North Holland. Like the Hondsbossche Dunes, HHNK was the initiator of the project and the province of North Holland functioned as authorized supervisor and was therefore responsible for the spatial quality and the societal support for the project.

The main difference between the two projects is that the private parties of Boskalis and Volkerwessels were also considered as main actors of the project. As explained previously, the project on the Markermeer Dikes knew a lot of technical complexity issues. To handle these kind of issues efficiently, Boskalis and Volkerwessels got invited to join the decision-making process of the project in an early stage, with the use of a contract form of a so-called 'alliance' in which both public and private parties cooperated together. Due to these complexity issues the expertise of these private contractors would be of value with the making of decisions for the project. A respondent from Boskalis stressed the importance of the inclusion of private parties in the decision-making process by stating the following: *"When the water board would have made decisions on its own and hired a contractor to implement their project plan afterwards, it would be likely that the design would contain too many risks and could therefore not be implemented"* (Interview 7, Boskalis (A), December 2020). The decision to invite the contractors to think along for the creation of the project's design provided them many opportunities to influence the decisions made. Within decision-making processes of the alliance, the private parties were not only asked to share their knowledge and expertise on the technical complexity issues, but also on the complexity issues concerning the project's articulate and critical inhabitants (Interview 7, Boskalis (A), December 2020).

Initially, private, market-oriented parties as Boskalis and Volkerwessels were less interested in the public aspects of decision-making. An interview respondent from Boskalis stressed this with the following quote: *"when being straightforward, one could say that a contractor considers participation as a sort of necessary evil"* (Interview 8, Boskalis (B), December 2020). Whereas public parties like HHNK and the province focused on gaining enough societal support for the project, the private interests of the contractors were more focused on a fast project process without too many costs. Another respondent from Boskalis confirmed this with the following sentence: *"we, as contractors, might aim to decide faster and make decisions based on time and money than wished for within an alliance"* (Interview 7, Boskalis (A), December 2020). These different values among different actors resulted in contradictions within the alliance. Two of the 'main' objectives of the alliance were to gain as much societal support as possible on the one hand, and to hurry up the project and its processes on the other (Interview 8, Boskalis (B), December 2020).

Another important actor for the Markermeer Dikes project was RWS, who could be considered as important due to the fact that they provided financial contributions via the HWBP-2 program. Together with HHNK, RWS was responsible to ensure water safety in the area. However, other than with the Hondsbossche Dunes, RWS played a less active role within the project of the Markermeer Dikes. This can be due to the fact that RWS did not have a direct interest in the dike whereas this was the case at the Hondsbossche Dunes, where RWS functioned as the administrator of the Dutch North Sea area.

Another relevant actor was the municipality of Hoorn. Like the project on the Hondsbossche Dunes, the municipality was able to add elements to the projects, but they had to finance these themselves. The

interests of the municipality, and thereby the elements they wished to realize with the project, were based on the interests of the inhabitants of Hoorn (Interview 2, HHNK (B), October 2020). Inhabitants of Hoorn had the possibility to share their interests by using the municipality (Interview 7, Boskalis (A), December 2020). The main interest of the municipality (and of its inhabitants) was the realization of an urban beach in order to improve recreational possibilities for both the inhabitants and the tourists of the city.

Power/resources

The most responsible actors are the most powerful in decision-making processes. Like with the project on the Hondsbossche Dunes, finances for the Markermeer Dikes came from the HWBP-2 program. This means that RWS and the water boards were the financing actors of the project, which made RWS and HHNK responsible for the water safety in the area. As said before, RWS had a rather passive role compared to the project on the Hondsbossche Dunes. The project's decisions were made by the alliance with members of HHNK and the private parties. With RWS not included in this alliance, an important member of the HWBP-2 program did not take part of the decision-making process. (Interview 6, Province North-Holland (B), November 2020). For spatial adaptations, the province and municipalities were able to realize spatial adaptations with the use of their own budgets. Again, the province acted as authorized supervisor which made them a powerful actor within the shaping of the project plan. Since approval of the project plan was needed by the province, the province was able to include their interests in the final result. These interests were especially based on the addition of spatial values in forms of nature and recreation.

The municipality of Hoorn was also a powerful actor for the fact that they actively engaged the project team to cooperate with them. By this active cooperation, the municipality aimed to create an urban beach for its inhabitants and tourists (Molen, 2014). The municipality's interests to improve the recreational possibilities with the realization of an urban beach was based on the overall interests of the city's inhabitants. This is confirmed by a respondent from the alliance *"the urban beach is supported by the municipality and its inhabitants"* (Interview 2, HHNK (B), October 2020). Additions to the existing project plan such as the realization of an urban beach are known as linkage opportunities. Linkage opportunities are *"ideas that can be taken into account without including it in the project plan"* (Interview 10, Arcadis, January 2021). Since these linkage opportunities did not have to be included in the project plan, they could be realized in any of the project's phases, which made it easier to implement such opportunities (Interview 10, Arcadis, 2021). Such linkage opportunities had to be financed by the party wishing this opportunity to be realized. This means that in this case, the municipality of Hoorn had to finance the linkage opportunity of an urban beach since they were the party aiming for it.

Rules

Decision-making

Due to its large size, the project of the Markermeer Dikes was obliged to make use of an environmental effect report (MER) for the decision-making. The decision-making process of the Markermeer Dikes project knew a lot of rules and regulations on different issues. Every single construction project of the dike needed a permit to ensure the values of the national and international laws.

Public participation

Before the project partners were allowed to start with the implementation phase of the project, the participation aspect had to be in order. This participation process was tested with a procedure at the

Council of State. When people felt excluded, they were able to engage the Council of State with their complaints on the project's participation aspects (Lammens, 2017). At the Council of State, these complaints were being judged and the following judgement decided whether it would be possible to start with the implementation phase of the project. As soon as, according to the judgement, participation would not have been realized significantly, participation had to be improved in order to start with the implementation phase. Other than objecting on the participation procedures, inhabitants and other relevant parties of the project were able to object at the Council of State for all other aspects of the project plan they disagreed on. As with the project on the Hondsbossche Dunes, the Administration Jurisdiction Division was the division of the Council of State taking care of these objections and if those objecting wanted to make use of a lawyer, they had to finance this themselves (Raad van State, n.d.).

The Markermeer Dikes knew a long Council of State procedure. The many complexities in the area resulted in a long-during process in which implementations could not be realized. To make sure the project's process got not slowed down, the alliance decided to already start with activities that could be carried out. Examples for such activities are *"the start of sand replenishments on the shore dike since this dike is not attached to the old dike, and the creation of work paths so that we can immediately start with the implementation as soon as the Council of State procedure is finished"* (Interview 2, HHNK (B), October 2020). This quote makes clear that the alliance sought for opportunities to start with the project before the end of the Council of State procedure, showing that the alliance was quite certain that this procedure would be in their favor. With these activities being carried out before the statement of the Council of State, they were not a part of the formal procedure and could therefore be considered as informal activities.

Water safety

Like with the project on the Hondsbossche Dunes, measures of the Markermeer Dikes project needed to be 'sober, robust, and effective' in order to be eligible for funding from the HWBP-2 program. This means that the project needed to be merely focused on the assurance of water safety by integrating this to the project's area (sober), the project had to take future developments - such as the rising sea level - into account (robust), and the efforts and costs needed to actually contribute to the intended objective of the project (effective) (Eker et al., 2014).

Nature conservation

The Markermeer Dikes were considered as an important part of the ecological structure of the area. With the dike enforcement, the region's ecological structure needed to be dealt with carefully (Eker et al., 2014). Also, some areas were assigned as Natura-2000 areas. These areas were designated as habitats for rare species, for which conservation objectives got formulated. Measures affecting these objectives were unallowed and should therefore be tested. Significant negative effects of types of habitat and/or species within these Natura-2000 areas needed to be mitigated. As soon as there would be no alternative solutions and mitigation possibilities, the project needed an 'imperative reason of overriding public interest' in order to continue its measures (Barrois et al., 2017).

The shore dike at Hoorn was initially assessed as negative for the fact that the occupation of space was relatively large. Also, with the shore dike being located further from the dike than other alternatives, it could destroy habitats for mussels and water plants. However, the implementation of a shore dike consisted of a realization of new habitats for water plants which could be considered as positive. Overall,

as soon as the shore dike would not be disturbed by recreation, the shore dike scored neutral on the assessment of Natura-2000 areas (Barrois et al., 2017).

Landscape and cultural history

The dike at Hoorn is part of the surrounding dike of the West-Friesland. Since this dike is considered as the historical boarder of West-Friesland, it is one of the provincial monuments of North-Holland (Zomer, 2019). Due to this monumental value of the dike, the dike is protected by the province. Based on the provincial value, recommendations on the dike enforcement were created. The most important recommendations were to take the preservation of the dike's character as a starting point, and the conservation of open water adjacent to the dike (Eker et al., 2014).

Due to this monumental value of the dike, the project partners were not allowed to enforce the dike for the fact that this would result in a decrease of this monumental value. To increase water safety, the project partners were limited to options which would not directly change the outlook of the existing dike.

Spatial regulations

The project on the trajectory at Hoorn had to deal with the already existing destination plans of the area. Some of these destinations were inconsistent with the implementations of the project. First of all, the road for cyclists and pedestrians got located in the destination for 'culture and relaxation'. This destination is meant for buildings offering possibilities for culture and relaxation. A cycle- and pedestrian road is not included within this destination. Second, the parking space for the recreants visiting the urban beach got located in the destination 'green'. This destination allows elements that contribute to a greening of the area. A parking space does not meet these requirements and could therefore not be considered as a possible adaptation (Ruumpol & Buwalda, 2018, p.119).

Discourses

Nature-based Solutions

The realization of a shore dike is considered as a nature-based solution. Half of the shore dike is assigned for ecological development and must therefore not be disturbed. As a result, the shore dike's cycle road is only placed on the other half of the dike. A respondent from the alliance stated the following: *"all nature compensation necessary for this project can be realized within the project of the shore dike. That is a major advantage of using a nature-based solution. Other advantages are that the shore dike results in possibilities for recreation, it is maintenance-friendly, and it remains possible to look over the water from the 'old' dike"* (Interview 7, Boskalis (A), December 2020). The use of a shore dike as dike enforcement is praised for its benefits. However, the decision to go for a shore dike is not based on the fact that it can be considered as a nature-based solution. The biggest benefit of the solution was that *"the shore dike made it possible not to harm the monumental dike, and to provide protection to this dike by assuring that the water flows less quickly towards the dike."* (Interview 8, Boskalis (B), December 2020).

Participation

The discourses on participation are interesting at the project of the Markermeer Dikes. By using an alliance, the project team reflected the interests of both the public and the private parties. Based on the conducted interviews, it is clear that the idea of the value of participation differed between these parties. Initially, since their board is chosen democratically, public parties have a strong focus on gaining societal support and realizing participation. A respondent from HHNK explained the importance of the

democratic system by referring to the taxes paid by the inhabitants of the area: *“actors who pay taxes are more important than those who do not pay taxes”* (Interview 1, HHNK (A), September 2020). Actors who pay taxes to the chosen water board are at the same time those who live in the water board’s area. At the same time, by rating the values of those who pay taxes over those who do not, HHNK included the values of those who democratically voted for the board of HHNK. *“It is important to include the preferences of inhabitants of the area above those from for example tourists coming from Drenthe, possessing a holiday home in the project’s area”* (Interview 1, HHNK (A), September 2020). To stress the value of participation among governmental organizations, a respondent from the province made clear that *“governmental organizations simply have the role and maybe even the duty to realize a good and weighted consideration, in which all values should be actively sought out”* (Interview 5, Province North-Holland (A), November 2020). Another respondent of the province confirmed this idea with the following sentence: *“with every dike enforcement project, there is a strong aim to achieve as much societal support as possible. That is something you aim for as a province, but also as HHNK and RWS”* (Interview 6, Province North-Holland (B), November 2020).

The discourse on participation strongly differs between public and private parties, which resulted in contradictions within the alliance. A respondent from a private party of the alliance explained that *“initially, we (the alliance) highly valued public participation. These values for participation came mainly from the water board within the alliance, and the province. On the other hand, the HWBP program and the contractors aimed more towards the idea of a fast process”* (Interview 8, Boskalis (B), December 2020). This quote shows the differences between the values of the public parties of HHNK and the province on the one hand, and the way how private parties valued participation on the other. What is interesting here, is that the HWBP program within the project of the Markermeer Dikes seems to have considered participation as a less important aspect when compared to the project on the Hondsbossche Dunes. This could be declared by the fact that RWS (the organization responsible for half of the HBWP-2 program’s funding) had a rather passive role within the decision-making process as described in the ‘actors’ part earlier.

Within the form of an alliance, both public and private parties needed to cooperate and share their values with each other. Their contradicting values resulted in give- and take situations in which it became impossible for all parties to fulfill their wishes. This means that it became difficult for private parties to realize a project which is as fast and cheap as they wished for, and it would be difficult for public parties to realize as much participation they aimed for.

Based on interviews conducted with actors of the alliance, private parties within the alliance had changed their view on participation and considered it as a more important element since they cooperated with public parties. However, the values for a quickly developed project had also become more important and since this contradicted with the participation aspect, participation sometimes was considered as an ‘obligation’ rather than a passionate value.

Governance structure

Since the most powerful actors of the Markermeer Dikes project were the public and private parties of the alliance, and the province of North-Holland, and with combination of formal rules and informal activities shaping the behavior of the project team, it can be stated that the characteristics of the Markermeer Dikes governance structure are most in line with those of the ‘public-private governance structure’, as defined by Driessen et al. (2012).

4.3 Environmental justice

Now the governance structures are determined, it is time to analyze the environmental (in)justice issues at both projects to find out whether different governance structures can affect environmental (in)justice. As explained earlier, environmental justice consists of the three elements of recognition justice, procedural justice, and distributive justice.

4.3.1 Hondsbossche Dunes

Recognition justice

Recognition justice is about the ability of people to participate with the decision-making of the project. When actors are misrecognized, it can be the case that they are excluded from the processes even though they are concerned with the outcome of the project. The selection of relevant parties for participation is an important factor to determine whether certain groups or individuals are in- or excluded from processes.

To ensure everyone was invited for information meetings, the project team of the Hondsbossche Dunes project made use of newsletters and folders in which they approached inhabitants within the project area to join these meetings (Interview 1, HHNK (A), September 2020). With the use of address files and by sending letters to local community centers, they aimed to approach everyone relevant for such meetings (Interview 5, Province North-Holland (A), November 2020). These information meetings were mainly planned during evenings and a rescheduling of these meetings was possible when it would be likely that the attendance at the meetings would be low due to, for instance, a game of the local football club scheduled at the same evening (Interview 1, HHNK (A), September 2020). At these information meetings, inhabitants were asked whether they would like to attend workshops in which participants could share their input (Interview 5, Province North-Holland (A), November 2020). Due to an unexpected high amount of interested inhabitants, it was impossible to accept all of them to this workshop. As a response, the project partners immediately planned a second workshop in which the remaining inhabitants could participate within decision-making processes (Aukes, 2014). Since presence at these workshops required a lot of time from its attendants, it might be the case that the people attending to such workshops would represent the project's area. A respondent from the province stressed this risk with the following sentence: *"the risk of these sort meetings is that only the old, retired people are present since they have plenty of time to go through the newspaper and to attend such meetings"* (Interview 5, Province North-Holland (A), November 2020). However, this same respondent made clear that the project team was extremely satisfied on the fact that there were a lot of young people present at participation meetings. With the project of the Hondsbossche Dunes, it was therefore not the case that only the interests of retired people got taken into account.

To get to know the parties for which it was relevant for the project team to consult with in a more intensive way than only with the use of information meetings, the project team made use of their own network, and the networks of parties and organizations they already were in touch with. However, since it was impossible to know all relevant parties in the early phases of the project, project partners focused on the creation of a network throughout the course of the project. *"Such a process takes a number of years including many moments of interaction with individual inhabitants on the one hand, and groups of inhabitants on the other. Throughout these years, these actors become sparring partners which you often contact"* (Interview 5, Province North-Holland (A), November 2020).

Members from the project team stressed that they strongly aimed to include all relevant parties to the project. Interview respondents made this clear with the following quotes: *“In such processes, you always try to include, explain decisions to, and listen to people as best you can”* (Interview 5, Province North-Holland (A), November 2020), and *“What matters with the creation of a project plan, is obviously to get everyone involved”* (Interview 6, Province North-Holland (B), November 2020). Documents and respondents made clear several times that there is a strong feeling that everyone who wanted to join participation processes, got provided with possibilities to do so. A respondent from RWS made clear that he was *“convinced that all groups are involved. Of course not all individuals, but all stakeholders were able to have their say”* (Interview 4, RWS, November 2020). There are people who have the idea that they are not heard, but this is mainly because of the fact that the final decisions are not in line with their values. According to this same respondent, this is not because these people were not heard, but because these values did not weigh up to all other values within the project. Based on long-term requirements, it is not always possible to make decisions that are in line with everyone’s values (Interview 4, RWS, November 2020).

However, not everyone is as satisfied on the extent to which they were recognized. According to respondents who went to the Council of State to object on the project, actors whose values differed from the project partners were excluded from the participation meetings. Several respondents did not agree on the project plan for the fact that the project’s outcome would result in negative consequences for birds located in the area and went to the Council of State to object to the project plan. These respondents made clear that due to the fact that they had a negative view on the project plan, they got excluded from the project’s participation meetings. Respondents from Vogelwerkgroep Alkmaar made clear that in the early phases, HHNK invited them to participation meetings by. However, *“as soon as the project aimed towards a solution using sand, we got sidelined”* (Interview 14, Vogelwerkgroep Alkmaar, January 2020). After deciding for this sandy solution, the project team organized participation meetings in which the project results got presented to all relevant parties excluding the bird associations. For these meetings, members of these associations had to actively approach the project partners in order to attend these participation sessions since they did not get invited anymore. These respondents made clear that the absence of such invitations was based on the fact that the bird associations’ interests were opposing to those of the project team (Interview 14, Vogelwerkgroep Alkmaar, January 2020).

One of the respondents interviewed made clear that during such projects, values of bigger relevant organizations were taken into account to a higher extent than the values from smaller organizations due to efficiency issues. Since it was not possible for the project partners of the Hondsbossche Dunes to consult with all organizations, they selected a limited number of organizations as representators of their field. For instance, to include values of nature organizations, the project partners organized consults with parties such as Natuurmonumenten and Landschap Noord-Holland in order to get an idea of the interests of nature organizations as a whole (Interview 11, Stichting Duinbehoud, January 2021). The selection of bigger organizations as representators instead of the smaller organizations was partly based on the fact that the bigger organizations can be more powerful when disagreeing on the project’s outcome. As bigger organizations have more financial resources, more members, and a higher status when compared to their smaller colleagues, they have more possibilities to successfully object to the project plan. For the Hondsbossche Dunes project, a respondent from one of the bird organizations made clear that the project team aimed to keep the bigger organizations of the project, such as Natuurmonumenten and Landschap Noord-Holland satisfied by providing deals so that they would not

object to the project's outcome. According to this respondent, Natuurmonumenten got provided with some money for a nature area behind the dunes, and Landschap Noord-Holland got offered a new nature area in order to remain silent (Interview 14, Vogelwerkgroep Alkmaar, January 2021). A respondent from another nature organization however, made clear that he was satisfied on the extent to which his input got taken into account. According to him, the inclusion of the bigger organizations is just how it goes in the Netherlands and when compared to other projects, the Hondsbossche Dunes project provided a lot of room for the inclusion of ideas of smaller organizations. He stressed that this was mainly the consequence of the attitude of the province and the project leader (Interview 11, Stichting Duinbehoud, January 2021).

Procedural justice

Procedural justice is concerned with the processes within the decision-making part of the project. The extent to which procedural justice is achieved can be measured by the extent to which participants are able to influence the project, and by the extent to which participants are provided with (transparent) information on the project and its decisions.

Influence

Many of the interview respondents (especially the project partners) explained that the project was based on democratic decisions. According to the province and HHNK, the final decision for sand replenishments instead of a traditional dike enforcement was the result of the values of the area's inhabitants. In fact, both the province and HHNK aspired for a traditional, hard dike enforcement in the first place but, as a result of the values of the area's inhabitants, the decision for a nature-based solution as a dike enforcement emerged (Aukes, 2014).

Since the province and HHNK are democratically chosen organizations, they were extremely concerned with the number of appeals at the Council of State and because of that, they were aware of the fact that they had to prevent these appeals as much as possible and they therefore, they know exactly how to do that (Interview 11, Stichting Duinbehoud, January 2021). As democratic organizations, the province and HHNK are responsible to take into account the values of inhabitants living, and organizations located in the project's area. Values and interests of tourists from other areas could be considered as less important since they are not as concerned with the outcome of the project when compared to those living or located in the area (Interview 1, HHNK (A), September 2020).

Respondents who went to the Council of State to object to the project made clear that their interests were not taken into account due to the fact that their values were not in line with the ideas of the project partners. These interview respondents represented bird associations who did not agree to the use of sand replenishments in order to enforce the coastal area since this would destroy the habitat of particular birds living there (Interview 13, Faunabescherming, January 2021; Interview 14, Vogelwerkgroep Alkmaar, January 2021). These interviews made clear that their organizations were engaged to participate within early phases of the project, but excluded to the decision-making part of the project once the project partners aspired for the use of sand replenishments as an alternative which was not in line with the values of these organizations. However, it has to be said that these bird organizations are, if compared to other relevant organizations within the area, relatively small organizations. It can therefore also be the case that these organizations were not taken into account in the decision-making processes as a result of their relatively small size.

It also became clear that some actors got included to the project due to the fact that their specific interests were needed to make the project's outcome a successful one. Nature organizations for example were engaged for consults to a high extent for the fact that there is a lot of nature existing around the dike (Interview 6, Province North-Holland, November 2020). Also, recreational entrepreneurs got invited to participation meetings to discuss the recreational possibilities of the area (Interview 9, recreational entrepreneur, January 2021). Since nature and recreation are two aspects which are in line with the aim of the province to add spatial quality to the area, recreational entrepreneurs and nature organizations were consulted with more intensively.

About nine parties went to the Council of State to appeal to the project. Their appeals were based on the project's effects on issues such as air quality, noise pollution, and drifting sand. All these objections were rejected at the Council of State. The only adjustment as a result of this Council of State procedure were the mitigation measures as a consequence of the loss of habitat for the turnstones and the oystercatchers (van der Wel, n.d.). A respondent from one of the nature organizations concerned with the project made explained the importance of finances at the Council of State by referring to his previous experiences of such procedures. This respondent had multiple experiences at the Council of State and explained that the one time he succeeded a procedure, their organization cooperated with another organization which provided them with enough resources to hire a law firm (Interview 11, Stichting Duinbehoud, January 2021).

Information

In general, information on the project development and its processes was provided at information meetings. These information meetings which were organized throughout the whole project's lifespan contained information on the problem at stake, possibilities for relevant actors to participate, and developments of the project and its processes. The information meetings were open for all inhabitants and other relevant parties of the area, resulting in meetings with over 100 attendants representing the whole area (Interview 6, Province North-Holland (B), November 2020). "*Information meetings where everyone was present were really organized to inform*" (Interview 6, Province North-Holland, November 2020). With project partners aiming for more participation than merely providing information to relevant actors, meetings were scheduled with smaller groups of actors in which they could think along on decisions made during the process of the project (Provincie Noord-Holland & Hoogheemraadschap Hollands Noorderkwartier, 2009).

For those who actively engaged the project partners, and for bigger organizations such as nature organizations, extra consults were organized to provide some extra information. These meetings took forms of *sketch meetings* and a with the use of an *advice group*. Sketch meetings consisted of possibilities for representatives of inhabitants, interest groups, and other relevant parties to share their interests and to think along with the project. These meetings were planned in the planning phase of the project so that the input of attendants could be taken into account in the decision-making. Discussion points at such meetings existed of (Interview 5, Province North-Holland (A), November 2020). The project partners asked the attendants of these meetings what the area would look like if it would be up to them. By using a group of approximately 10 or 15 actors representing multiple different values (Interview 6, Province North-Holland (B), November 2020), there was room for discussion and compromises were made between the meeting's attendants. An interview respondent illustrated this by providing an example on a discussion in which attendants were asked on the completion of an area. During this discussion, nature organizations aimed to assign a part of the area for nature development

and discussed this subject with inhabitants present at the meeting. The final outcome of the discussion was that the area would be assigned for nature development, but that it would have to include a viewpoint for the visitors of the area (Interview 5, Province North-Holland (A), November 2020).

The advice group of the Hondsbossche Dunes consisted of approximately 10 representatives of nature organizations, recreational entrepreneurs, and inhabitants (Interview 11, Stichting Duinbehoud, January 2021). These members were frequently updated on the project during consults and during these consults, they were also asked to share their perspective regarding these updates. These perspectives were shared to the project team, which then took these perspectives into consideration. An interview respondent from the province was satisfied on the use of the advice group: *“It took a lot of time, that is just how it works, but after all, it actually worked pretty well”* (Interview 6, Province North-Holland (B), November 2020). This same respondent made clear that, partly due to the views of the advice group’s members, the project team decided to realize a seaward alternative as the project’s outcome. Inhabitants and recreational entrepreneurs of this advice group made clear that they preferred a beach above a traditional dike, which influenced the outcome of the project (interview 6, Province North-Holland (B), November 2020).

Other than these forms of participation, the project knew more intensive forms of participation with the more directly concerned inhabitants and with the more business-oriented stakeholders. Directly concerned inhabitants were those who, for example, live next to the dike, and were therefore more concerned with the projects’ outcome than others. Due to their direct interests, meetings with small groups of these actors were organized in which it was not only the aim to solely provide information, but also to invite them to discuss how they could benefit from the project’s outcome. Ideas from the attendants of these meetings were analyzed by a consultancy to find out whether they could be realized in combination with the alternative, and whether they were financially realizable. Like the previously mentioned participation meetings, these meetings took place in the planning phase of the project, before the decision for an alternative was made (Provincie Noord-Holland & Hoogheemraadschap Hollands Noorderkwartier, 2009). Overall, inhabitants were satisfied on the outcome of the project (Aukes, 2014).

The more business-oriented stakeholders were parties such as nature organizations and recreational entrepreneurs that had knowledge on specific aspects of the area. With the province aiming for spatial quality in the area, it was considered valuable to make use of the expertise of these parties on how spatial quality could be added. A respondent from the province illustrated this with an example of the cooperation with ‘Stichting Duinbehoud’ as an organization with a specific interest in the region: *“organizations such as Stichting Duinbehoud were more included for the fact that they were not only invited to information meetings, but we also called them occasionally with questions on the project. Compared to inhabitants, organizations such as Stichting Duinbehoud are more experienced and a bit more professional, which creates a more business-related relationship”* (Interview 5, Province North-Holland (A), November 2020). Since such organizations had a more business-oriented attitude, they were more convenient for the project partners to consult with when compared to inhabitants of the area.

People who did not agree with the project were able to submit their view on the project in forms of so-called ‘zienswijzen’. These zienswijzen were the responses of people on the project plan once it was shared with them. The submitted zienswijzen were taken into account by the project partners which then provided the submitters with answers to their views. The Hondsbossche Dunes project consisted of

over 50 zienswijzen which can be divided into eight clusters (Hoogheemraadschap Hollands Noorderkwartier, 2013). The province and HHNK clarified their answers in personal consults as soon as they were unclear. One of the issues that came forward was the issue of drifting sand that would occur as a consequence of the project. 18 of the over 50 zienswijzen of the project was about the issue of drifting sand to occur as a consequence of the project (Bodde et al., 2019). The project team answered these zienswijzen concerning drifting sand by explaining drifting sand would only occur temporarily and that measures would be taken in order to take care of this drifting sand (Hoogheemraadschap Hollands Noorderkwartier, 2013).

A respondent from the province stressed that the possibility to submit zienswijzen to the project plan was of importance to clarify the reasoning behind decisions made. According to him, it did not have to be problematic when actors disagreed on (parts of) the project plan as soon as everyone had a clear view on the reasoning behind decisions made. With a clear reasoning behind decisions, it became more likely that people were willing to accept these decisions (Interview 6, Province North-Holland (B), November 2020).

According to one of the members of the project team, the project team aimed to be as transparent as possible. This respondent stressed the importance of constantly informing those who were concerned with the outcome of the project and he made clear that transparency was a strong value within the project team (Interview 5, Province North-Holland (A), November 2020). An interview respondent from a nature organization confirmed this by stating that he was very satisfied on the transparency of the project team. He explained that *“the project team paid a lot of attention to the explanation of the ideas, alternatives, and considerations”* (Interview 11, Stichting Duinbehoud, January 2021).

The bird organizations who appealed to the project at the Council of State on the other hand, make clear that they were not informed as much as other parties. According to them, the fact that they opposed to the project was the main reason that they were not invited to information meetings and that they were not informed as frequently as those with a positive view on the project's outcome. One of the respondents from these bird organizations made clear that they only got provided with information when they actively engaged the project team for this information (Interview 14, Vogelwerkgroep Alkmaar, January 2021).

Distributive justice

Distributive justice is about the question ‘who gets what?’ and whether these goods are divided equally. Overall, most inhabitants and stakeholders are satisfied on the outcome of the project. Several interview respondents made clear that the beginning of the project knew some resistance among the relevant actors of the area due to the fact that *“people resist towards new ideas quite quickly with the result that it takes quite some time until everyone is positive about the plan”* (Interview 6, Province North-Holland (B), November 2020). However, multiple respondents made clear that the overall attitude towards the project changed and that in the end, other than a really small group wishing for another solution, everyone was satisfied on the project's outcome (Interview 4, RWS, November 2020; Interview 5, Province North-Holland (A), November 2020; Interview 6, Province North-Holland (B), November 2020).

The overall view on the outcome of the project is positive. The fact that only a small number of people disagreed on the project plan shapes the idea that the Hondsbossche Dunes project consists of a just distribution of goods. However, the fact that there still were objections on the project means that not everyone was satisfied on the project and its outcome. Distributive justice is measured by not only

looking at the burdens and benefits of the project, but also to the extent to which burdens were compensated.

Benefits

The most frequently mentioned benefits of the project were the new possibilities for developments that came with sand replenishments in front of the dike. Compared to the prior situation which consisted of a 'hard' dike, the 'soft' and sandy Hondsbossche Dunes, could be considered as an adaptive method. Since it was uncertain how much the sea level will rise in the future, sand replenishments were considered as an ideal method since it provided the opportunity to quickly respond to the rising sea level if needed (Interview 4, RWS, November 2020).

Other than benefits in the field on an increased water safety in the area, the use of sand nourishments created additional possibilities for recreative, economic, and ecological development. For instance, the village of Petten experienced an expansion of its recreation and catering facilities, functions which the village barely consisted of before the dunes existed in the area (Provincie Noord-Holland, 2012). These new recreational possibilities attracted tourists to the area which was good for the village's economy. Also, with the creation of dunes, the project connected the ecological zones on the northern and southern areas which provided possibilities for fauna to move between the two. Also, the new dunes came with new natural developments in the area (Interview 11, Stichting Duinbehoud, January 2021).

Compared to other alternatives, many interview respondents were convinced that sand nourishments would come with little negative consequences for the surrounding area and could therefore be considered as beneficial. First of all, alternative options as a heightening of the dike cannot be considered as adaptive when compared to the use of sand nourishments since such alternatives were not as easily adjustable to the changing climate as the chosen alternative, and second, a 'traditional' dike enforcement, which included a heightening of the dike, would not only increase the dike in its height, but also in its width. In order to meet the safety standards, the dike would have had to be increased by five meters. Such an increase would have come with a widening of 30 meters. Houses located next to this dike would have needed to be removed or relocated as a result of this alternative (Interview 5, Province North-Holland, November 2020).

Burdens

Overall, the most relevant parties were satisfied on the outcome of the project. However, some parties were not satisfied at all and would have preferred an alternative solution. Based on the interviews conducted, the biggest burden of the use of sand nourishment as dike enforcement perceived is that it destroyed habitats for birds within the area (Interview 13, Faunabescherming, January 2021; Interview 14, Vogelwerkgroep Alkmaar, January 2021). The situation before the dike enforcement with sand nourishments consisted of an area in which the 'hard' substrate of the dike was optimal for mussels to attach on, with the settling of many birds as a result. Sand replenishments as dike enforcement created a surface which was impossible for mussels to attach on, causing an area in which it became extremely difficult for birds to survive. The hard substrate of the traditional dike was unique in the Netherlands, since the majority of the country's coastal area already consists of a beaches and dunes. This unique situation created a unique habitat for different species such as the oystercatcher and the turnstone and should therefore, according to respondents of bird protection associations, have been kept intact. These interview respondents preferred a flood-resistant dike over the use of sand replenishments. According to them, a flood-resistant dike would have preserved the unique habitat for species in the area and could

therefore be considered as the most environmental-friendly alternative. These problems were perceived differently by the project partners. According to a respondent from one of the bird foundations, the project partners were convinced that the issue at stake was not as problematic as sketched by the bird associations. According to this respondent, *“the province and HHNK kept arguing that since these birds can fly, they will find another place to forage”* (Interview 13, Faunabescherming, January 2021). The project partners made clear that the problems concerning the loss of habitat of birds could be taken care of by mitigation measures (Interview 4, RWS, November 2020), whereas the bird interest groups were convinced that it was impossible to solve these problems with the use of mitigation measures (Interview 14, Vogelwerkgroep Alkmaar, January 2021).

Compensation

The project partners were obliged to implement mitigating measures for the burdens of the project. The main burdens of the project were the loss of habitat for birds and other species. The birds that, due to their large amounts within the area, faced the consequences of the sand replenishment the most, were the turnstones. With the high number of turnstones foraging in this area, the Wadden Sea objectives of the Natura-2000 program obliged the project partners to implement mitigating measures for these birds. These mitigating measures were threefold (Karman et al., 2013):

- The implementation of elastocoast in the dikes north of the area: elastocoast is a material which mussels could attach on (Interview 11, Stichting Duinbehoud, January 2021). As a mitigation measure for turnstones, elastocoast got implemented just above a village called ‘Sint Maartenszee’, about six kilometers above the Hondsbossche Dunes area.
- High tide refuges north of the area: the realization of high tide refuges was necessary in combination with the implementation of elastocoast. High tide refuges were considered essential since the birds needed a place to go to at high tide periods. Several areas north of the Hondsbossche Dunes were assigned suitable to function as such a refuge.
- The development of ‘rich dikes’ at Den Helder and Texel: this mitigation measure consisted of adjustments of the Wadden Sea dikes at Texel according to the ‘rich dikes’ principle. With the use of this principle’s guidelines, the dikes at the chosen areas would lead to an increase of food availability for birds on the long term (Koolstra et al., 2013).

Due to these mitigating measures, the objections at the Council of State were rejected which allowed the project to start its implementation.

However, according to several interviewees, the mitigation measures of the project partners were not all as successful (Interview 13, Faunabescherming, January 2021; Interview 14, Vogelwerkgroep Alkmaar, January 2021). The elastocoast in the dikes north of the area was implemented to create a surface on the dike on which mussels were able to attach, which would create an area in which turnstones would be able to forage. This new habitat for these birds would prevent these turnstones to disappear. However, according to the interview respondents of the bird foundations, elastocoast as a mitigation measure did not succeed. According to one of these respondents, *“the elastocoast implemented on the dams starts to come off and does not contribute to an new forage area anymore”* (Interview 14, Vogelwerkgroep Alkmaar, January 2021).

The same respondent considered the creation of high tide refuges as relatively successful (Interview 14, Vogelwerkgroep Alkmaar, January 2021). However, since this mitigation measure functioned as a refuge,

rather than as a mitigation to realize a new forage area, this mitigation measure was not enough to take care of the disappearing habitat of the turnstones on its own.

At last, the mitigation measure of the rich dikes at Texel and Den Helder can also be considered as unsuccessful. These measures did not lead to a recovery or an increase in the number of mussels and with that, the mitigation measures did not have a positive effect on the number of turnstones and/or oystercatchers (Vogelwerkgroep Alkmaar E.O., 2019). According to the respondent from one of the bird associations, this is the result of the dike being far too high (Interview 14, Vogelwerkgroep Alkmaar, January 2021). The height of this dike made it impossible for mussels to attach on which has the result that this measure can be considered unsuccessful. Another respondent explained that it was impossible for mitigation measures to succeed at all due to the fact that these types of birds are extremely location-bound. According to this respondent, turnstones are not capable of finding new habitats to settle which makes it impossible for mitigation measures to succeed at all (Interview 13, Faunabescherming, January 2021).

4.3.2 Markermeer Dikes

Recognition justice

As with the Hondsbossche Dunes project, it is of importance to understand the extent to which recognition justice is achieved within the Markermeer Dikes project. This part of the thesis describes the methods used to recognize relevant actors for the project, and the extent to which these methods were successful.

The question on which parties could be considered as relevant for the project was answered geographically (Interview 7, Boskalis (A), December 2020). This means that relevant parties were those living in the area in which the project took place. Inhabitants of the project's area were invited to information meetings and informed with the use of newsletters. During these information meetings, all attendants were asked whether they would like to join brainstorm sessions or participate in an advice group (Interview 7, Boskalis (A), December 2020). To ensure a high attendance at information meetings, the project team organized multiple of these meetings. To prevent information meetings to conflict with people's agendas, they were planned during evenings (Interview 6, Province North-Holland (B), November 2020).

Actors who volunteered for more intensive participation sessions were mainly the ones with a critical view on the ideas of the alliance. This made it less likely that participation sessions consisted of a representative since these sessions did not include the ideas of satisfied inhabitants of the area. According to one of the respondents from the alliance, *"most of the time, when the loudest people are satisfied, so are the rest of the people"* (Interview 7, Boskalis (A), December 2020). However, this same respondent also made clear that this method comes with the risk that by merely focusing on the loudest people, those who initially were satisfied on the project's ideas might change their view. Another respondent from the alliance explained that they found it challenging to take care of such problems. This respondent made clear that to reduce the risk that the decision-making would be merely based on the opinion of the 'loudest' people, the alliance sent letters to not only inhabitants who lived next to the dike, but to a much bigger area that reached far behind this dike as well. People receiving these letters were invited to sign up for an online dike panel (Interview 8, Boskalis (B), December 2020). This dike panel shared questionnaires to everyone signed up for it with issues of which the alliance expected much critique from the loudest people. By approaching the more silent actors as well, the dike panel was used

to provide a representation of the values of the whole area. The outcomes of the questionnaires could also be used to legitimate made decisions. A member of the alliance made this clear with the following example: *“when an inhabitant or a group of inhabitants accused us of not listening to them, or not performing participation correctly, we had a questionnaire which showed that the majority of people was really satisfied on the way we communicated”* (Interview 8, Boskalis (B), December 2020).

The alliance made stressed it was not difficult to get a clear overview of the relevant actors within the project’s area. It did not take long until some nature organizations such as Staatsbosbeheer and Natuurmonumenten came forward as relevant organizations. Other actors who were considered as relevant actors from an early stage were actors who had a critical view on the project such as the Cultural Heritage Agency, who looked critically on the project’s developments concerning the monumental value of the dike. These actors provided the province with arguments to thwart the decisions made by the alliance and therefore, it was of importance for the alliance to be aware of the perspectives of such actors (Interview 8, Boskalis (B), December 2020).

To increase this network of relevant actors in the area, environmental managers were assigned to represent the environmental aspects for the project. These environmental managers had the task to ensure that values of all relevant parties were considered in the decision-making process. Since these environmental managers moved along with the project, they created a network of all relevant people of the area. A member of the alliance made clear that he *“has a feeling that at one point, the environmental managers knew everyone concerned with the dike”* (Interview 7, Boskalis (A), December 2020).

A respondent from the alliance showed that they had a good overview on the relevant parties concerned with the Markermeer Dikes project. Overall, this network did not exist of private individuals, but of representators of interest groups. When the alliance wanted to understand the opinions of inhabitants on certain problems, they used their network to determine which parties should be invited to discuss these problems with (Interview 8, Boskalis (B), December 2020).

Inhabitants who lived next to the dike were considered by the alliance as inhabitants who should be taken into account to a higher extent. These inhabitants were recognized as more relevant for the project and therefore, they got provided with extra participation possibilities when compared to those living further away from the dike. However, even though the alliance aimed to include them more, one of the respondents representing inhabitants living next to the dike made clear that they were excluded from some decision-making processes. This respondent stated that several decisions were based on the outcome of some questionnaires which they had never received. One of these decisions included a cycle road on the dike next to the respondent’s house. This respondent explained that *“the alliance had conducted an investigation which concluded that people found it amazing that such a cycle road would be realized. We asked around and nobody had received a questionnaire on which this conclusion was based while the questionnaire was even sent to inhabitants outside of Hoorn. We are a small group compared to a large group of people who do not even know what is going to happen exactly, and even though this cycle road will be realized next to our houses, we did not receive this questionnaire”* (interview 15, Stichting Zuyderzeedijk, January 2021). With this quote, this interview respondent made clear that the methods used by the alliance to include everyone did not lead to a successful recognition justice outcome.

Procedural justice

Just as with the results on the Hondsbossche Dunes, this chapter contains the extent to which relevant parties got provided with information on the one hand, and were able to influence the project and its outcomes on the other

Influence

The decision to go for a shore dike as dike enforcement alternative made before the introduction of the alliance. The idea for a shore dike developed in the process prior to the existence of the alliance, when HHNK still functioned as the only leading actor. As a result of a session with actors from HHNK, RWS, the province, and Arcadis, two alternatives were created to enforce the coastal area of Hoorn (Interview 10, Arcadis, January 2021). The shore dike was one of the two alternatives for this trajectory. The other alternative was an outward dike enforcement. The decision to go for a shore above the outward dike enforcement was based on several arguments. First, a shore dike would offer possibilities for nature development and water quality which an outward enforcement of the dike would not. Second, when looking at landscape, a shore dike would keep the monumental value of the existing dike intact. Also, compared to the outward dike enforcement, a shore dike would have the least effects on the most important values, as determined by HHNK, the province, and RWS. For the trajectory at Hoorn, the values considered as most important were the monumental value of the dike and the area's ecological values (Lammens, 2017). After they got introduced as new leading actors of the project, the members of the alliance further developed the shore dike alternative (Interview 10, Arcadis, January 2021).

A respondent from the project team made clear that it was possible for residents to influence the alternative chosen, but that their influence depended on certain circumstances. This respondent further explained it by referring to the a shore dike which was considered as preferred alternative at another trajectory of the Markermeer Dikes project. Even though this shore dike was preferred, public participation changed the outcome of this trajectory. Many inhabitants of this area did not want a shore dike to be realized in their coastal area and started lobbying against it. In the end, even though the shore dike was the most environmental alternative, the alliance decided to go for a different solution as a result of the values of the area's inhabitants (Interview 10, Arcadis, January 2021). However, the possibilities to adjust the decision for the final alternative are limited. The same respondent explained this with the use of an example: *"if a rare animal would be living in the area outside the dike, the perception of inhabitants becomes a less important factor. Such circumstances can be able to strongly influence the assessment"* (Interview 10, Arcadis, January 2021). However, according to several respondents, it was next impossible for individuals not living next to the dike to successfully influence the project (Interview 8, Boskalis (B), December 2020). If individuals wanted to get heard, they had to make use of organizations to represent their values (Interview 8, Boskalis (B), December 2020). Not only did people make use of these organizations, they also created them. An example of a creation of such an association is provided by an interview respondent living next to the dike who explained that a group of people living next to the dike created an association which they used to try to influence the project's decisions. As a result, this association got invited by the alliance to share their values as member of an advice group in which they, together with representators of other organizations, created an advice for the alliance on values which they thought should be included in the project's decisions (Interview 15, Stichting Zuyderzeedijk, January 2021).

With their active and positive attitude, the municipality of Hoorn was able to successfully influence decisions made during the project. The municipality had wishes for an urban beach and a cycle road and

since these ideas did not negatively affect the shore dike anyhow, the municipality's wishes were considered as successful linkage opportunities (Interview 7, Boskalis (A), December 2020). This cooperation with the municipality brought complications for actors opposing to these plans. It became unclear whether inhabitants of the area should engage HHNK or the municipality of Hoorn with their complaints and ideas on the project plan, which made it more difficult for them to influence the project. One of these opposing respondents described this as a 'trick' from the project team. This respondent illustrated the problem as follows: *"the problem was that the alliance created the urban beach, and the municipality was assigned as responsible for what would be realized on the beach. This created two different procedures: the municipality managed the participation for the beach, and the alliance managed the participation for the beach's surface. These different procedures made it complicated to object to the project plan since the municipality was responsible for some parts of these objections, while the alliance was responsible for the other parts"* (Interview 12, Vereniging Oud-Hoorn, January 2021).

In order to include the ideas of organizations in the project's decisions, HHNK created an advice group consisting of representatives of such organizations. The purpose of this advice group was to measure the extent to which societal values are taken into account equally. This advice group consisted of the members of the project team on the one hand, and representatives of interest organizations such as inhabitants, businesses, nature organizations, and recreational organizations on the other (Mijnders et al., 2008). The task of this advice group was to advise HHNK prior to decision-making processes. An interview respondent from the project team explained the processes of the advice group as follows: *"During these advice group meetings, we showed different variants on decisions that could be made. We asked the advice group to get together and decide what, according to them, would be the best alternative. It was not the case that the advice group was decisive for our decisions made, but of course we wanted to get an idea of what their values were"* (Interview 10, Arcadis, January 2021). That the outcome of the advice group was not decisive was confirmed by a respondent who was a member of this advice group. This respondent made clear that even though the advice group's process went well, its end result was not used at all. This respondent made clear that the project team argued that the advice created by the advice group was not used for the fact that it was technically impossible (Interview 15, Stichting Zuyderzeedijk, January 2021). The members of the advice group did thereby not succeed in influencing the projects' decisions.

As with the Hondsbossche Dunes project, there were possibilities for actors to submit 'zienswijzen' as a response to the project plan as soon as this was determined. Project partners were obliged to provide answers to these zienswijzen in which they explained whether these were taken into account and what the argumentation behind this decision was. For the whole Markermeer Dikes project, 143 zienswijzen were submitted. These zienswijzen varied from comments on the extent to which participation has been carried out, to comments focusing on the content of the project. An example of such a zienswijze is the following: *"The submitter of this zienswijze states that involved parties experienced a conscious secretion of documents which could be used to verify estimations of costs and risks that come with the project. Attendants of information meetings experience a lack of interaction. During these meetings, clues are given that available information is not allowed to be shared with the attendants"* (Alliantie Markermeerdijken, 2018). The project team answered this zienswijze by explaining the argumentation behind this secretion. For instance, *"disclosure of the risk file might harm the economic and financial values of HHNK and private parties involved in the alliance. Therefore, it is not allowed to make this file*

public” (Alliantie Markermeerdijken, 2018). All 143 zienswijzen were answered by the alliance so that the submitters of these zienswijzen would be able to understand the alliance’s arguments.

As said before, the decision to go for a shore dike as a dike enforcement alternative was made prior to the existence of the alliance. Parties were therefore not able to decide on another alternative when the alliance was in use. However, for certain discussion points, the alliance approached the inhabitants of the area to share their ideas. With the use of design ateliers and the dike panel as described previously, the alliance aimed to gather the inhabitants’ values on these discussion points. These discussion points were on issues which would not influence the ideas of the alliance, but focused more on complementing the empty spots within the alliance’s ideas. An example of such a discussion point is the revetment of the dikes. With the use of the dike panel and design ateliers, inhabitants of the area got asked what revetment they would like to see on the dike. The outcome of this participation procedure resulted in an implementation of a dike revetment as wished by the inhabitants of the area (Alliantie Markermeerdijken, 2019).

After the decision for the project was made, 37 appeals were filed at the Council of State for the whole Markermeer Dikes project. Many of these submitters were people who did not think it was necessary to enforce the Markermeer Dikes. A respondent from the alliance stressed that *“there are many people who have the idea that everything in life should stay the same. These people are concerned about their living environment, since this will change at some places as a result from this project”* (Interview 7, Boskalis (A), December 2020). This same respondent made clear that many people did not succeed at the Council of State as they were not able to successfully substantiate their argument. Some actors had some money available to hire some experts for a more substantiated argument. However, in the end, nobody substantiated their arguments good enough to succeed within this Council of State procedure. Just as with the project on the Hondsbossche Dunes, it became clear that in order to be successful at the Council of State, it is important to have enough financial resources in order to hire expertise which is needed to substantiate statements. The need for financial resources is also a reason why it is important to unite as a group in order to become successful in influencing decisions made.

Information

The alliance made use of information meetings and newsletters to inform people on the project and its processes. Other than the (older) project on the Hondsbossche Dunes, the Markermeer Dikes project had more possibilities to provide information since more people made use of the internet during the project’s processes. With the use of a website and digital newsletters, it became easier to share information (Interview 5, Province North-Holland (A), November 2020). It is made clear in documents that the alliance aimed include inhabitants and other relevant parties in participation processes in early stages in order to ensure as much societal support for the project as possible (Mijnders et al., 2008). The project partners made clear that they organized a lot of information meetings and kitchen table consults to provide information (Interview 7, Boskalis (A), December 2020). Also, design meetings were organized in which certain points were discussed by inhabitants of the area. An example of such issues were the previously described discussions on which dike revetment should be used.

The alliance knew several environmental managers. These environmental managers were employees of both Boskalis and HHNK, the main actors within the alliance. These managers focused on the communication with the actors in the project’s area and were responsible for the organization of information meetings, communication throughout the process, guidance etcetera (Interview 7, Boskalis

(A), December 2020). The background of these environmental managers did not matter with their assigning to the project. According to a respondent from the alliance, it would not be likely that the background of the assigned environmental managers would influence their way of working. This respondent substantiated this statement by stressing that *“environmental managers are certain types of people, who are enthusiastic about their job. If someone would become environmental manager to ensure the inclusion of, for instance, Boskalis’ values, it might be better for this person to choose another role. In fact, it is more likely that our environmental manager disagrees on the ideas of his colleagues at Boskalis than that he tries to include these ideas. Environmental managers are people who are passionate about their job, and they strongly aim to ensure that the values of the actors of the area are looked after* (Interview 7, Boskalis (A), December 2020).

According to several respondents, there was not much room for participation just when the alliance was introduced. These respondents explained that the alliance had their own plan and locked themselves up for half a year to work on this plan, without sharing it to the outside world. An interview respondent from the alliance explained that this lack of shared information was based on the alliance’s idea that it would be better if they would thoroughly investigate in the problem at stake first, create a design hypothesis after and include other actors after this design would be finished (Interview 8, Boskalis (B), December 2020). Another respondent pointed out that this lack of communication was the result of the mentality of private parties. This respondent described that the private parties in the alliance had the idea that *“since they already discussed these issues, they would not have to discuss them again”* (Interview 10, Arcadis, January 2021). After many different actors (from inhabitants to parties such as the province) pointed out that the alliance had to interact more, they learned their lesson and started to become more interactive with their environment with the organization of multiple information meetings.

These organized information meetings were mostly meant to provide information on the project and its processes. Each trajectory of the Markermeer Dikes program had its own information meetings which were mainly meant to provide information on the project and its processes. However, as these information meetings were planned prior to the final decision of the project, the attendants of these meetings had the possibility to share their values. These attendants were provided with question sheets on which they could write their ideas. A respondent from the alliance made clear that the main effect of these question sheets was that they provided issues which might have been overlooked by the project team (Interview 10, Arcadis, January 2021). For those who were interested in a more intensive form of participation, workshops were organized in which attendants could share their interests and think along with the plans. An interview respondent from the alliance considered the participation during this period as really intensive and explained that many meetings with multiple actors were organized (Interview 7, Boskalis (A), December 2020).

Another respondent made clear that there were some problems with the functioning of the information meetings organized by the alliance. This respondent made clear that there was a lack of answers from the alliance to the inhabitants of the area. Due to the structure of an alliance, the representatives of the alliance within information meetings constantly changed. *“When we asked questions during information meetings, we were told that the question would be discussed with other members of the alliance and that they would come back with an answer. However, the next information meeting was chaired by another member of the alliance who was not aware of the question asked during the previous meeting. When we asked the same question we asked in previous meetings, we again were told that the question would be*

discussed with the rest of the alliance and that they would come back with an answer” (Interview 12, Vereniging Oud-Hoorn, January 2021). In the end, inhabitants often did not get provided with answers to their questions asked during information meetings.

By periodically informing the inhabitants of the area using newsletters and their website, the alliance aimed to make the participation process as transparent as possible (Pabbruwee et al., 2018). Several respondents stated that the alliance was generally transparent on the information provided. One of these respondents made clear that overall, no information was withheld. The only information which was not shared was information on concepts. The reason that information on concepts was not immediately shared was that the alliance needed to be certain about this information before it was shared with others (Interview 10, Arcadis, January 2021).

Other forms of meetings in which the alliance shared information took place in smaller groups. People who lived next to the dike were provided with more information since they were considered as more directly concerned actors of the project. Participation with these people took forms of kitchen table consults. During these consults, inhabitants were asked what values of the dike they perceived as most important and should therefore be taken into account. For the whole Markermeer Dike project, over 400 kitchen table consults were planned (Pabbruwee et al., 2018). An interviewed respondent living next to the dike explained that they had to actively engage the alliance for these kitchen table consults. This respondent was concerned with the realization of a cycle road on top of the dike. However, as soon as the municipality had approved on the idea to create such a cycle road, the alliance had the idea that it was not necessary anymore to organize kitchen table consults. However, after they actively engaged the alliance to organize these consults, the respondent was satisfied on the way these consults went (Interview 15, Stichting Zuyderzeedijk, January 2021).

At last, specific issues were discussed with organizations with expertise on those issues. For example, the alliance’s findings on nature were discussed with nature organizations and archeological findings were shared with experts on archeological issues. The alliance had cooperation agreements with several organizations. These organizations were organizations such as nature organizations as Staatsbosbeheer with which a cooperation agreement was needed for the fact that Staatsbosbeheer was one of the owners of parts of the area in which the project took place (Interview 7, Boskalis (A), December 2020). The most important cooperation agreement however was the agreement with the municipality of Hoorn. The municipality of Hoorn got actively involved with the project plan and had ideas on the completion of the area to add spatial quality. When the decision for a shore dike was definite, the municipality actively searched for possibilities to cooperate with the alliance in order to create an urban beach. Even though they did not influence the decision to go for a shore dike as an alternative, they managed to successfully use the project to implement an urban beach. A respondent made clear that the municipality’s positive and active attitude was essential to be successful (interview 7, Boskalis (A), December 2020).

Distributive justice

Like with the analysis of the Hondsbossche Dunes, distributive justice at the Markermeer Dikes can again be determined by the burdens and benefits and their distribution. Also, mitigating measures have to be investigated in to find out whether burdens of the projects’ outcome are compensated.

Benefits

The decision to realize a shore dike to enforce the coast in front of Hoorn was based on several benefits of the solution. The main benefit of the shore dike was that it would meet the water safety

requirements. Increasing water safety was, after all, the main objective for the Markermeer Dikes project (Smit et al., 2015). The realization of a shore dike reduced the number of waves crashing into the existing dike, which increased water safety for the city of Hoorn (Interview 8, Boskalis (B), December 2020).

A shore dike as dike enforcement alternative came with more benefits than merely the increasing of Hoorn's water safety. First of all, it was essential not to harm the existing dike due to its monumental value. A shore dike could be considered as the ideal alternative to increase water safety for the area without affecting the existing dike and its monumental value. In fact, by reducing the waves crashing into the existing dike, the shore dike did not only result in more water safety of Hoorn, but also protected the dike and its monumental value to a higher extent (Interview 8, Boskalis (B), December 2020).

Second, the implementation of a shore dike provided recreational possibilities. With the creation of a shore dike, the municipality of Hoorn cooperated with the alliance in order to realize an urban beach, parking lots, and a cycle road (Lammens, 2017). These additional linkage opportunities resulted in recreational possibilities. *"The urban beach of Hoorn is a place where people can play, walk, cycle, sunbathe, sport, drink coffee, or lie down after a swim in the lake"* (Gemeente Hoorn, n.d.). Also, with the shore dike being lower than the existing dike, it remained possible to look over the water from the dike. This would have been different with a traditional dike enforcement, where the existing dike would be heightened (Interview 7, Boskalis (A), December 2020).

Another benefit that came with the shore dike alternative concerning an addition of spatial quality, is the possibility to increase the natural value of the area. Half of the shore dike included a cycle road and focused thereby on recreative values. The other half however, was not made accessible and therefore functioned as an area for ecological development (Interview 7, Boskalis (A), December 2020). Other than ecological development on the shore dike itself, the shore dike created new possibilities for nature to develop around the dike. An interview respondent described this with the following example: *"Sand placards could be placed around the dike to create shallows. This brings possibilities for fish and plants to develop, which increases the area's ecological value"* (Interview 7, Boskalis (A), December 2020).

According to a respondent from the alliance, a shore dike can be considered as maintenance-friendly. Even though erosion could take place on some locations of the dike, it is likely that sand would sediment on other locations of the dike (Interview 7, Boskalis (A), December 2020).

Burdens

The burdens that occurred as a result of the project of the shore dike at Hoorn were mostly based on the linkage opportunities realized with the implementation of the project. One of the concerns mentioned were the consequences of the urban beach on the monumental value of the dike.

One of the interviewed respondents representing an association made clear that they were concerned on losses of the dike's monumental values due to the realization of an urban beach in front of it. This respondent made clear that they, as an association, they did not necessarily oppose to an urban beach, however, they did not agree on its size (Interview 12, Vereniging Oud-Hoorn, January 2021). The alliance made clear in their documents that it was unavoidable that in order to ensure water safety, the project would face some losses of monumental values (Lammens, 2017). However, the respondent made clear that the dike did not lose its monumental value due to the shore dike, but as a result of the size of the urban beach, the number of cars, and the placement of beach pavilions. The creation of such an urban

beach just in front of the monumental dike ruined the view from the dike and with that, its monumental value which had to be protected by the province (Interview 12, Vereniging Oud-Hoorn, January 2021).

Not only did the linkage opportunity in the form of an urban beach ruin the view from the dike, it also created many additional recreation opportunities for the area. Even though these recreation opportunities can be considered as benefits as recreational possibilities result in positive economic consequences within the region, many inhabitants considered them as burdens for the fact that they resulted in traffic congestions. *“With an urban beach, the alliance wants to attract more people to the city while, at this moment, traffic is already stuck on busy days”* (Interview 15, Stichting Zuyderzeedijk, January 2021). This increased number of cars would not only result in more traffic, but also in more cars parked next to the beach. Multiple people were concerned with the consequences of these parked cars. Inhabitants living in buildings next to the dike were concerned with the fact that cars parked next to the dike would reflect the sunlight with their rooftops, which would disturb their view over the water (Interview 8, Boskalis (B), December 2020). Not only would the parked cars result in a ruined view for those living next to the parking lots, respondents made clear that parked cars would also disturb the view from the dike and the city. When looking from the city, *“it becomes difficult to find the water when looking over the shiny roofs of all those cars”* (Interview 12, Vereniging Oud-Hoorn, January 2021). At the same time, the view over the city will be ruined as a result of the cars as well. *“The inner city is one of the most beautiful views there is. From the dike, you have an unimaginably beautiful view on the historical skyline of the city. When we’re not careful, this will be ruined with a row of shiny rooftops”* (Interview 12, Vereniging Oud-Hoorn, January 2021).

Another linkage opportunity which resulted in burdens among inhabitants was the creation of a cycle road on the dike. Inhabitants living next to this dike were concerned that there might be an increased number of bikes, e-bikes and mopeds on this dike. According to one of these inhabitants, the placement of asphalt on the dike would not only affect the monumental character of the dike, it would also disturb the residential and living environment of these inhabitants (Interview 15, Stichting Zuyderzeedijk, January 2021).

The project also resulted in negative consequences for fishermen within that area. For fishermen with loose traps to catch fish, there were no negative consequences since their traps can be placed somewhere else. For fishermen using fixed traps to catch fish, temporary or even permanent consequences arose since the implementation phase and the outcome of the project resulted in a situation in which their traps are not able to be placed on that location. Fishermen who had permits to fish at the shore dike’s location are not able to fish there anymore since they need a ‘hard’ surface to attach their fishing nets on. Conversations have been conducted with these fishermen in which suitable solutions to these problems have been devised (Pabbruwee et al., 2018).

Compensation

The shore dike in front of Hoorn is part of the whole program of the Markermeer Dikes. With the whole trajectory damaging a lot of natural values within its coastal area, increasing natural values as a result of the shore dike were used to compensate the natural loss within other areas on the route. In one of their documents, the alliance made clear that due to mitigating measures, all ecological losses were successfully compensated (Lammens, 2017). A respondent from the alliance made clear that the shore dike was of great value for this mitigation. *“All mitigation needed for this project is realized within the shore dike project”* (Interview 7, Boskalis (A), December 2020).

During the implementation of the project, the project team decided to execute their implementation activities via water as much as possible. For the whole Markermeer Dikes project, over 90% of the necessary material, mostly containing sand, was supplied over the water. By carrying out activities via water as much as possible, the amount of burdens during the implementation phase were limited. For instance, by supplying sand over water instead of over land, the project team did not make use of the dike roads, preventing traffic jams on these roads to occur (Interview 2, HHNK (B), October 2020). To limit the negative consequences of the implementation of the project even more, the project team carried out extra measures to limit the nuisance. To limit noise pollution, vehicles were provided with 'white noise' instead of beeping reversing signals. To limit drifting sand, the alliance carried out measures such as keeping the sand wet in periods of drought and wind in order to prevent the sand to drift, and placed dust screens on locations facing drifting sand if needed. To limit light nuisance, the project team ensured that the use of light was limited. In situations when the use of light was essential, the light merely pointed at the location which needed to be lightened, or the light would be colored in a way that it would not be as disturbing (Alliantie Markermeerdijken, n.d.-e).

People who face measurable losses due to the dike enforcement were able to get compensated financially for these losses. Measurable losses are most of the time losses in forms of a decreasing values of people's houses (Pabbruwee et al., 2018). Values of houses could decrease when, for instance, a cycle road is placed in next to these houses (Interview 15, Stichting Zuyderzeedijk, January 2021). Personal values on the other hand cannot be compensated. For example, people who were used to hear water sloshing against the dike and are now not able to hear that anymore as a result of the project are not compensated for the loss of their personal values (Interview 8, Boskalis (B), December 2020). Other compensation possibilities could occur as a result of the project's activities. When activities physically harmed people's properties (such as buildings, soil structures etcetera), people were able to get compensated for these losses (Pabbruwee et al., 2018). However, with the project team carrying out these activities over water, damages on people's properties were limited.

The project team aimed to compensate the negative consequences that occurred as a result of the introduction of a parking area. First, research is done on how reflections from the sun on the rooftops of cars can be prevented as much as possible by rearranging the parking area. Also, there are regulations that, when a small number of visitors is expected, their cars have to be placed on the sides of the area, resulting in a limited disturbance for those who live in the adjacent flats (Interview 8, Boskalis (B), December 2020).

5. Conclusion and discussion

5.1 Conclusion

This research aimed to investigate in the relationship between governance structures and the extent to which environmental injustices occur within dike enforcement projects in the Dutch coastal area. The comparison of two projects differing in their governance structures made it possible to examine the effects of these structures. These projects made use of Nature-based Solutions in order to ensure water safety. One of the projects is the project of the Hondsbossche Dunes, in which large amounts of sand gogt replenished in order to enforce the coast, and the other project is the project of the Markermeer Dikes, from which one of its trajectories consisted of a shore dike to ensure water safety in that area. Multiple interviews and documents are analyzed in order to find an answer to the main research question:

How do different governance structures influence the environmental justice outcomes of particular Nature-based Solutions projects?

This question is answered with the answering of two sub-questions focusing on the main question's different elements. The first sub-question relates to the governance structures of the projects, as it is essential to determine these in order to investigate the differences between both projects. The first sub-question is therefore formulated as follows:

1. *What are the governance structures of both projects?*

In order to answer the main question to achieve the research aim, it was firstly essential to select two projects with different governance modes. These governance modes were determined with the use of Liefferink's (2006) Policy Arrangement Approach on the one hand, and the division of governance structure of Driessen et al., (2012) on the other. Liefferink's PAA includes the elements of *actors*, *power/resources*, *rules*, and *discourses*. These same elements are used by Driessen et al. (2012) to distinguish several governance modes. By combining the works of these authors to this thesis' findings, it became possible to determine the governance modes of the projects selected.

	Hondsbossche Dunes	Markermeer Dikes
Actors	<ul style="list-style-type: none"> State actors (HHNK, RWS, Province North-Holland) Important roles of decentralized actors 	<ul style="list-style-type: none"> Important roles of both market and decentralized actors
Power/resources	<ul style="list-style-type: none"> Financial resources on water safety from HHNK and RWS Financial resources on the completion of the area in terms of spatial quality from the province and the municipalities 	
	<ul style="list-style-type: none"> Market actors as contractors: Boskalis and Van Oord to implement the project plan as determined by HHNK and RWS 	<ul style="list-style-type: none"> Market actors as members alliance: Boskalis and VolkerWessels provided with knowledge and decision-making possibilities from an early stage of the project
Rules		
	<ul style="list-style-type: none"> MER-procedures for decision-making Water safety requirements to be sober, robust, and effective <ul style="list-style-type: none"> Natura-2000 rules Spatial regulations (destination plans) <ul style="list-style-type: none"> Council of State procedures 	<ul style="list-style-type: none"> Regulations concerning provincial monuments
	<ul style="list-style-type: none"> Rules to create a landscape consisting of 'young dunes' elements 	

		<ul style="list-style-type: none"> Informal activities in forms of activities carried out prior to the Council of State's approval of the project plan
Discourses	<ul style="list-style-type: none"> NBS praised for its additional opportunities for ecological development and recreation 	
	<ul style="list-style-type: none"> Participation considered as a duty of public parties 	<ul style="list-style-type: none"> NBS used to mitigate and compensate ecological losses that occurred due to dike enforcements on other locations of the Markermeer Dikes project. Diverse ideas among members alliance on the importance of participation
Governance structure	Decentralized governance structure	Public-private governance structure

During the analysis of both projects' governance structures became clear that there are some interesting differences between the projects of the Hondsbossche Dunes and the Markermeer Dikes. The actors, however, did not differ too much. With the selected projects located in the same area, both projects had players involved from HHNK, the province North-Holland, and RWS. Even the contractors, who were not bound to the area, were partly similar at both projects. Merely looking at these actors shows similarities between the projects which makes them unusable to select for such a comparative case study. However, the similarities between actors only are perfect evidences that a policy arrangement should not be determined by investigating only one of its elements, but by including all elements and their interconnectedness.

Even though most of the actors of both projects were similar, there were some important differences in the division of power and resources. The finances for both projects came from the HWBP-2 program, a program existing of contributions from the Dutch water boards and RWS. With RWS and HHNK being the contributors to this program, they initiated the projects which made them responsible for the assurance of water safety. These responsibilities made RWS and HHNK powerful actors in the decision-making of both projects. However, the extent to which RWS was involved was different for both projects. With RWS being the administrator of the Dutch North Sea, the fact that the Hondsbossche Dunes project made use of sand located in this North Sea made RWS decide to become more actively involved in the project, and as a result, they start sharing the project's responsibilities together with HHNK. At the Markermeer Dikes project on the other hand, RWS decided to stay more on the background and left the responsibility for decisions made up to HHNK as RWS did not have any additional interests for this project.

Another important actor for both projects was the province. As authorized supervisor of both projects, the province was responsible for the inclusion of certain requirements to the project plan. These requirements were for instance the addition of spatial quality or the compliance with participation. The province handed out permits as soon as the projects met these requirements, making the province another powerful actor in the decision-making processes.

The most interesting difference between the actors and how power and resources were divided among them was the differing role of the contractors. With the project of the Hondsbossche Dunes, the contractors were selected with the use of a competitive dialogue. Proposals were tested on the extent to which they would realize water safety, add spatial quality, and were financially realizable, requirements determined by RWS, HHNK, and the province. Since they had the best proposal, the contractors of Boskalis and Van Oord were selected to implement their idea. At the Markermeer Dikes project on the

other hand, contractors were invited to the decision-making processes from the project's formulation phase. Due to complexity issues, HHNK invited the contractors of Boskalis and VolkerWessels to share their knowledge and expertise in decision-making processes in a cooperation form of an alliance. This provided the contractors with more possibilities to include their interests within the decisions that had to be made. The relatively passive role of RWS at this project could be one of the reasons that these private parties were provided with such powers.

The rules of both projects were also quite similar. Both projects had to deal with formal rules concerning issues such as water safety, nature conservation, and participation. In addition to these regulations, the Markermeer Dikes project had to deal with regulations concerning the monumental value of the dike. The already existing dike of Hoorn had such a high monumental value that it was prohibited to harm this dike in any way. In order to receive permits from the province to start implementing, both projects had to assure that such issues were in order. A difference between both projects is that, other than the Hondsbossche Dunes project, the Markermeer Dikes project performed informal activities. Since the alliance had to deal with a long Council of State procedure, they were not allowed to start with the implementation of the project. As a result, the alliance sought for ways to start with activities that did not need permission, such as preparing activities that would make it possible to start implementing faster as soon permission for the project plan was granted. As these activities were outside of the project's formal regulations, they can be considered as informal activities.

This research has investigated in discourses on the concepts of Nature-based Solutions and participation. At the Markermeer Dikes project, it became certain that positive discourses on Nature-based Solution were not decisive for the decision-making of the final alternative. The reason to go for a shore dike as dike enforcement alternative was based on the fact that options for other alternatives were limited due to the existing dike's monumental value. For the Hondsbossche Dunes project, it is more likely that the decision for a Nature-based Solution was influenced by the solution's positive discourses for the fact that the solution's additional possibilities for nature and recreation seemed to have been the reason for the preference of the solution above other alternatives.

The discourse of participation knows some interesting differences. Overall, the project partners of the Hondsbossche Dunes project considered participation as their duty since they were chosen democratically. They highly valued participation and made clear that it was essential to include everyone's values. The project of the Markermeer Dikes considered participation more as an obligation, rather than as an important decision-making element. The Markermeer Dikes' project partners made clear that the private parties were initially not motivated for participation processes. However, after cooperating with HHNK in the form of an alliance for a while, these private parties changed their view on the importance of participation.

By linking these conclusions on the elements of the PAA with the governance modes as they are formulated by Driessen et al. (2012), conclusions can be drawn on the governance structures of both projects.

For the Hondsbossche Dunes, the power and the resources were distributed among several public actors, namely HHNK, RWS, and the province of North-Holland. The contractors were provided with relatively little power since they were assigned to implement the project plan created by the project team consisting of public actors. The rules which guided the decisions made during the project were formal rules, in forms of regulations and legislations for nature reservation, water safety, and

participation. With the power and resources divided over multiple public actors, and with the use of formal rules for decision-making processes, the governance structure of the project is characterized as a 'decentralized' one.

The project of the Markermeer Dikes also made use of a governance structure in which the HHNK, RWS, and the province played important roles. The power and resources were divided among these public parties. However, HHNK decided to include the contractors of Boskalis and VolkerWessels in the decision-making processes, providing them with power and resources to play a large role in decision-making processes. Other than dealing with formal rules similar to those of the Hondsbossche Dunes, the Markermeer Dikes' project team carried out informal activities by starting with activities before the plan was formally approved upon by the Council of State. Due to the cooperation between public and private parties, the division of power and resources over these parties, and the use of formal and informal rules, it can be determined that the project on the Markermeer Dikes consisted of a 'public-private' governance structure.

With the governance structures determined, it is time to answer the second sub-question, which is formulated as follows:

1. What are the environmental justice outcomes of both projects?

To measure the extent to which a project is environmentally just, the conceptualization of Schlosberg (2003) is used. Schlosberg divides the concept of environmental justice into the elements of recognition justice, procedural justice, and distributive justice. The extent to which projects influence these three concepts determine the extent to which projects are environmentally just.

	Hondsbossche Dunes	Markermeer Dikes
Recognition justice	<ul style="list-style-type: none"> Newsletters to invite inhabitants to information meetings, use of information meetings to invite attendants to more intensive participation meetings Use of own network in order to find relevant interest group, expansion of this network throughout the project's existence Positive view on recognition among project partners, feeling of exclusion based on different interests among some interested parties 	
	<ul style="list-style-type: none"> Inclusion of bigger parties as representators of smaller, similar organizations 	<ul style="list-style-type: none"> Use of online dike panel to include values of all inhabitants
Procedural justice	<ul style="list-style-type: none"> Organization of multiple information meetings and workshops <ul style="list-style-type: none"> Difficulties to influence via the Council of State Less influence experienced by actors with ideas differing from the project team 	
		<ul style="list-style-type: none"> Very little amount of participation during the alliance's first half year of existence Input advice group not used Difficult to successfully participate due to cooperation alliance-municipality, and due to constantly changing representators
Distributive justice	<ul style="list-style-type: none"> Increased water safety Development of ecological and recreational possibilities 	
	<ul style="list-style-type: none"> Loss of habitat for birds in the area Unsuccessful mitigation measures for lost habitats birds 	<ul style="list-style-type: none"> Loss of monumental value dike Negative consequences of recreational possibilities in forms of increasing numbers of cars, bikes etc.

Recognition justice

The recognition of relevant actors for the project was quite similar at both projects. Both projects made use of newsletters to invite inhabitants for information meetings, and invited them for more intensive participation forms, such as workshops and design ateliers, during these information meetings. Other, more professional actors such as nature organizations and cultural-historical associations were recognized with the use of the project partners' existing networks, which got expanded throughout the projects' lifespans. Overall, the partners of both projects had a positive view on the inclusion of relevant actors and did not have the idea that parties that should be included were excluded from participation processes. The project partners of the Markermeer Dikes aimed to include voices of as many parties as possible with the use of online questionnaires. As their project being implemented several years earlier than the Markermeer Dikes project, the Hondsbossche Dunes project did not have that many options to make use of online panels to collect everyone's views. Despite these different possibilities, it seems that, in general, both projects did not experience many issues concerning the recognition of relevant parties.

However, some parties with interests for both the Hondsbossche Dunes and the Markermeer Dikes projects had the idea that they got excluded due to the fact that their interests were not in line with those of the project partners. Even though they initially got recognized as relevant parties to take into account with the projects' decision-making processes, they did not get invited for these participation meetings as soon as their interests contradicted to those of the project partners. For the Hondsbossche Dunes project, this exclusion may be the result of the fact that in order to be efficient, the project team mainly included the bigger organizations and considered them as representators of their kind of organizations. For instance, the values of a big organization such as Natuurmonumenten were included to represent the values of all nature organizations. Smaller nature organizations had less possibilities to influence the project.

Linking these findings to the conceptualization of recognition justice concludes that initially, both project teams succeeded in recognizing relevant actors in the projects' early stages. However, since the main essence of recognition justice is to help achieve equality in people's ability to participate, the fact that some actors have the feeling that they are excluded from participation processes based on their ideas shows that there are some problems with recognition justice in terms of in-/exclusion within both projects. Therefore, even though the project partners successfully recognized relevant actors, recognition injustices still occurred due to the fact that the projects' participation processes aroused feelings of exclusion among those with different interests. This shows an experienced inequality in people's ability to participate.

Procedural justice

The extent to which the projects were procedurally just can be determined by analyzing the provided information and influence to parties concerned with the projects' outcomes. Both projects were quite similar when looking at the organization of participation meetings, and the aim for transparency. However, a major difference is that the Markermeer Dikes' alliance did not make use of these methods for the first half year of its existence, when they started with the creation of a project plan. After an evaluation among relevant parties made clear that there were wishes for more participation, the alliance started with the provision of information and the invitation of actors to participate in forms of workshops and other participation meetings.

When looking at the influence of actors, some issues occurred due to the systems in the Netherlands. For both projects it became clear that the options for actors to influence the project by appealing to the Council of State were limited. Both projects had to deal with such appeals, from which all got rejected. Many of these appealing actors made clear that they were unsatisfied with the possibilities of individuals at the Council of State and explained that it is only possible to succeed such procedures when appealing as a group, and when enough financial resources are provided.

The participation meetings of the Markermeer Dikes project knew some organizational complexities which made it difficult for actors to influence the project. Due to the project's active cooperation with the municipality and due to the many different members of the alliance, it became complicated for actors to succeed in influencing the project's decisions. Some interview respondents considered these complexities as intentional tricks of the alliance with which they did not have to adapt their ideas based on the values of interested actors.

Procedural injustice also occurred as a result of recognition injustice. Since parties with different ideas than those of the project partners experienced exclusion to participation meetings, both the information and influence provided to them was limited.

Distributive justice

For the Hondsbossche Dunes, most parties were satisfied on the project's outcome due to its possibilities for recreational and ecological development. However, some parties made clear that it would have been better if a different alternative was chosen, since the chosen alternative had negative influences on different species living in the project's area. Especially some species of birds, for which the area was an ideal habitat based on the hard substrate of the dike, faced negative consequences due to the project's end result. These consequences had to be mitigated by the project team, but the mitigation measures did not succeed.

The decision to go for a shore dike at Hoorn in the Markermeer Dikes project was also received positively by most of the actors within the project's area. The alternative of a shore dike was praised for its possibilities for ecological and recreational development, and for the fact that it would not directly affect the monumental value of the existing dike. The main burdens of this project however, were the consequences of the urban beach which got realized as a linkage opportunity. Even though this urban beach had positive consequences on the recreational possibilities of Hoorn, it affected the existing dike's monumental value. Also, the increased recreational possibilities that came with the realization of an urban beach aroused some critique among inhabitants since they had to deal with more traffic and a ruined view over the city as a result of the increased number of cars attracted by the urban beach.

Environmental justice

Overall, both projects can be criticized on their environmental justice outcomes. Both cases knew some recognition injustice issues since it seems that both project teams have aroused feelings of exclusion among some actors disagreeing to the project plans. These feelings of exclusion contributed to procedural and distributive injustices as a result. On the field of procedural justice, there are some concerns on how the Council of State procedure takes place in the Netherlands, with limited options for actors to influence the project. Participation meetings were similar at both projects. Differences are that the analysis of the Hondsbossche Dunes project made clear that bigger organizations were able to influence decisions to a higher extent when compared to smaller ones, whereas such a phenomenon did

not come forward during the analysis of the Markermeer Dikes. Further, the project of the Markermeer Dikes contained some complexities which made it difficult for interested parties to get their values included in the decision-making processes of the alliance. At last, the distributive justice aspects reflect the recognition injustices of the projects. Actors who felt excluded from participation processes due to their different ideas on the outcomes of the projects, are the ones that were the least satisfied on these outcomes.

Conclusion

The projects compared for this research contain different governance structures. With the use of Liefferink's (2009) Policy Arrangement Approach in combination with the division of governance structures as described by Driessen et al. (2012), it was possible to create a complete view on both projects' governance structures. The Hondsbossche Dunes project can be characterized as a project with a decentralized governance structure, in which several public parties are the most important actors. The project of the Markermeer Dikes has a public-private governance structure in which public parties cooperate with private parties in the form of an alliance.

As a result of the different governance structures, the analyzed projects differed in their resources on participation. It became clear that the interests of private parties are not always in line with the participation aims in the Netherlands, and that therefore, the decentralized parties of the Hondsbossche Dunes project valued participation higher than the Markermeer Dikes' alliance. Despite regulations on participation procedures of such projects, the interests of the alliance's private parties seem to have influenced the project's environmental justice outcomes.

Environmental injustices occurring at the projects were not all due to the project's governance structures. Both projects consisted of recognition injustices in forms of experienced exclusion of some parties with interests contrary to those of the project teams. This exclusion can partly be declared by the fact that the project partners considered the values of bigger parties as representative for smaller parties' values. As a result of this exclusion, opposing parties had less possibilities to participate, which made it so that their values were less reflected in the end result. Therefore, the projects did not only result in recognition injustices, but also in procedural and distributive injustices. In addition to these injustices, the complexities of the Markermeer Dikes project resulted in procedural injustices where this was not the case at the Hondsbossche Dunes project. The limited options of relevant parties to successfully influence the project's decisions can be considered as the result of a public-private governance structure, since it seems that the alliance's private parties do not value public participation too much.

Based on these findings, one may conclude that a public-private governance structure leads to more environmental injustice issues than a decentralized governance structure. This investigation shows that in a public-private governance structure, private parties contribute to a lesser aim for participation, resulting in more procedural and thus, more environmental injustices. Even though this public-private governance structure knows more environmental injustices when compared to a decentralized one, this does not mean that decentralized governance structures can be considered as a 'just' governance structures. Like public-private governance structures, decentralized governance structures also know some injustices. However, since similar injustices are found in the public-private governance structure, it can be the case that these injustices are the result of contextual factors in the Netherlands, rather than the decentralized structure's elements.

The findings of this thesis show that, even though they are often framed as positive solutions, Nature-based Solutions are not without problems. This study makes clear that implementations of Nature-based Solutions may lead to environmental injustices in several forms. Even though selected governance structures may result in environmental injustices, it is shown that these structures are not the only factors resulting in environmental injustices. It is therefore important for project teams to understand that no matter what governance structure is used, it should not be assumed that Nature-based Solutions are flawless, and that it is plausible that environmental injustices occur out of their project.

Understanding the origin of experienced injustices at such projects can be of value to understand what should be adjusted to minimize these injustices. On the one hand, environmental injustices can be limited by tackling some overall issues, such as the limited possibilities for actors appealing at the Council of State. On the other hand, environmental injustices can be limited by adjusting elements specified to selected governance structures, such as the influence of private parties on participation procedures.

In the end, there are multiple factors which may result in environmental injustices. Even with projects implementing Nature-based Solutions, solutions which are framed as win-win situations, environmental injustices occur. Many of these injustices are the result of context-related factors, such as location-bound regulations. Some injustices may also be the result of a project's governance structure. Therefore, in order to minimize environmental injustices, it is of great importance for projects to extensively consider which governance mode they decide to make use of, and what should be paid attention to when with the use of particular governance modes.

5.2 Discussion

It might be appealing to consider the different findings on environmental justices experienced among both project as a reason to conclude that a public-private governance structure results in more environmental injustices than a decentralized one. However, this should be reflected upon critically.

First, multiple interview respondents from the analyses of both project made clear that they had limited possibilities at the Council of State procedure. They stressed the importance of financial resources and the size of their group for the possibilities to be successful when appealing at this institution. As a result, none of the appeals submitted for both projects were approved upon. Several authors confirmed the statements of these respondents.

First of all, Corstens & Kuiper (2014) explained in their research that generally, there are too many factors influencing access to the judge in the Netherlands. Lawyers are able to determine their prices and judges shape the procedures which makes it possible for them to make these procedures more complex or simple. Other than that, there are many more factors such as the digitalization and specialization within the jurisprudence, which make it so that access to the judge costs much time and money. Corstens & Kuiper (2014) also showed the importance of access to the judge by explaining that the extent to which it is possible to access the judge influences the aim of inhabitants, businesses, and governments to comply with the law. Other than Corstens & Kuiper (2014), multiple other Dutch authors criticized the Council of State system in the Netherlands. Van Oosten (2020) questioned the independence of the Council of State, by explaining that it is next to impossible for Dutch citizens to succeed when their interests are in conflict with the government. Kruijssen (2021) concluded that the since the Council of State is a system, it does not have any sense of conscience which results in the fact that there is barely any room for self-reflection which and therefore, it is likely for the system to fail. This author suggests that the key positions within the Council of State should be taken by people who know

how it is to be distrusted by the government (Kruijssen, 2021). These authors' criticism confirms the statements of several interviewed respondents who described that their possibilities at the Council of State were limited when disagreeing to the project team. For the analyzed projects, the Council of State procedure can be considered as a factor limiting the options for inhabitants to influence the project, and thereby contributes to environmental injustices among both projects. As this Council of State procedure is applied to all comparable projects in the Netherlands, it is likely that due to this procedure, environmental injustices might occur within many other projects concerning the environments of Dutch citizens. It can be of value for future investigations to analyze the functioning of the Council of State in the Netherlands, and to formulate recommendations on how environmental injustices can be prevented to occur as a result of this Council of State procedure.

Second, environmental injustices measured by within this research are solely based on the justices among humans. The main environmental injustices measured are based on ideas differing between relevant parties within the area on the one hand, and of the project team on the other. However, some authors criticized the concept of environmental justice due to the fact that it tends to be anthropocentric, and that 'ecological justice' needs to be included (Baxter, 2004). Environmental justice refers to the justice for human beings in regard to environmental issues, which is quite different from ecological justice, which stresses the importance of justice for nature (Kopnina & Washington, 2020). According to these authors, environmental justice tends to prioritize social justice over ecological justice and should be reversed with the current state of environmental degradation in mind (Kopnina & Washington, 2020). Multiple authors therefore stressed that the framework for environmental justice as we know is incomplete and should be supplemented with the element of ecological justice (Baxter, 2004; Schlosberg, 2009). This changing view on what is important within the concept of environmental justice is relevant for this thesis. With the environmental justice framework used for this thesis, conclusions are drawn that state that the main injustices that occur as among human actors. With such conclusions, this thesis does not show negative consequences on the field of biodiversity loss, such as the losses of species of birds within the Hondsbossche Dunes' area. When using this thesis as a policy recommendation, future projects might aim for a better inclusion of human actors in their decision-making processes. However, this does not directly solve issues of biodiversity losses. It might therefore be of great value to add the element of 'ecological justice', in which values in the field of biodiversity are also taken into account as an important factor determining the extent to which projects are environmentally just.

5.3 Policy recommendations

Based on the findings of this research, there are a few recommendations for future projects that can be taken into account to improve the extent to which the project can be environmental just.

1. Make sure that parties are informed on all decisions made during the project and its processes.

It is made clear that the provision of information is an important element of project's decision-making processes. However, it seems that a successful provision of information may be difficult practice. Both projects analyzed for this thesis resulted in recognition injustices experienced by relevant parties. These experienced injustices emerged from a feeling of exclusion of parties from decision-making processes. To prevent such injustices to occur, the argumentations behind such exclusions should be thoroughly explained to these parties. By clearly informing these parties on these argumentations, they might understand the decisions made which may lead to more satisfaction among those parties and with that, feelings of exclusion might disappear.

2. Make use of the one continuous contact person to interact with relevant parties.

This recommendation is mainly meant for projects with public-private governance structures, or other governance structures consisting of project teams with diverse actors. Out of this research, it became clear that the alliance of the Markermeer Dikes project constantly sent different members to represent them at participation meetings. These constantly changing representators resulted in communication issues, which made it so that some relevant parties did not feel heard. This recommendation therefore suggests to make use of one continuous contact person to be present at such participation meetings. When relevant parties at participation meetings see the same face at all meetings, it becomes easier for the representator to understand the issues of the present parties at such meetings, which makes it easier to include their values in the decision-making processes in the end. This way, procedural injustices can be limited.

3. Consider participation as a value, rather than as an obligation.

This might be the most important recommendation of this research. Participation should be considered as a value, rather than as an obligation. Considering participation as an obligation comes with the risk that components of participation are considered as objectives on a checklist. In order to realize an environmental just project outcome, all relevant parties and their values should be taken into account seriously, and not as an obligation. Participation meetings should not be arranged for the fact that it is obliged to arrange several of these meetings, but because it is considered as important to hear the values of those who needed to be heard. Kitchen-table consults should not be limited to only one per direct party since this is that what's needed to gain a permit to start with the implementation, but should take place as many times needed to ensure that values of these parties are understood. It is extremely important to consider participation as valuable instead of an obligation in order to realize environmentally just projects.

5.4 Limitations

The aim of this research was to measure the extent to which different governance structures would lead to different environmental (in)justices. As explained in the methodology section of this thesis, collected data from different actors is used to find this relationship. Multiple different, relevant actors got interviewed and different types of documents were analyzed in order to reach this research objective.

Even though many interviewed parties were similar at both projects, some interview respondents differed. For instance, interviews were conducted with contractors who were part of the alliance of the Markermeer Dikes project, but not with the contractors of the Hondsbossche Dunes project. This incompleteness of conducted interviews might result in an invalid comparison of the cases for the fact that information on the un-interviewed parties was gained via other data collection methods. Conclusions on these parties were therefore based on the ideas of others, whereas conclusions on the roles of similar parties on the other project were based on their own vision. These differences could lead to a distorted idea of the situation which makes the research less valid. Such kind of limitations could be prevented in further researches when more time is spent in engaging such parties to conduct interviews with.

Other respondents interviewed for both projects were actors from both project teams, actors suggested by these project teams, and actors who went to the Council of State. However, there are groups of people that are outside of these categories but could be of value for this research nevertheless. These groups are for example those who were satisfied with the projects' outcomes without being actively involved in decision-making processes, or those who were not satisfied with the projects' outcomes, but did not appeal at the Council of State. With these parties not interviewed for this research, this investigation might provide an incomplete view of the environmental injustices of the area. To prevent such issues to occur in future similar investigations, more time should be spent on engaging actors and conducting interviews with them to gain a clear view on the idea of the projects' complete environments.

Other than these limitations on data collected through interviews, there were some limitations on finding the right documents to analyze. The project of the Markermeer Dikes is more actual than the Hondsbossche Dunes project. As a result, there is a website on the Markermeer Dikes project containing multiple documents on the project and its processes. However, since the Hondsbossche Dunes project is already finished for several years, the project's website does not exist anymore, which made it a lot more difficult to find the right documents to analyze. Multiple documents on the Hondsbossche Dunes project have been found and analyzed, but since the website on the project did not exist anymore, there is a risk that data collected from these documents is less complete than the data collected from the documents of the Markermeer Dikes project.

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Appendices

Appendix A

Interview guide – project partners

Kunt u iets vertellen over het project?

PAA

Actors/coalitions

- Wie zijn de leidende actoren in het proces?
- Welke actor/actoren heeft/hebben het project geïnitieerd?
- Wie zijn de betrokkenen/stakeholders? En wat is hun rol?
- Waar is de selectie van belanghebbenden/stakeholders op gebaseerd?
- Wat is de invloed van deze stakeholders op het proces van besluitvorming?
- Wordt er nog een selectie gemaakt van ‘belangrijke’ stakeholders en ‘minder belangrijke’ stakeholders?
- Worden sommige belanghebbenden beter meegenomen in het proces dan andere belanghebbenden? En zo ja, hoe komt dat?/waar is deze keuze op gebaseerd?

Resources/power

Verdeling van machtsmiddelen, middelen om invloed mee uit te oefenen.

- Zijn er partijen die meer macht hebben dan anderen?
- Welke zijn dit?
- Hoeveel zijn hiervan?
- Waarom hebben juist deze partijen meer macht?
- Is dit altijd zo geweest of is deze verdeling van de macht en middelen om invloed uit te oefenen veranderd in de loop van de tijd?
- Wat is de rol van de initiator van het project? Heeft deze meer macht dan andere partijen?

Rules

- Wat zijn de regels?
- Wat kunnen belanghebbenden doen?
- Wat zijn de regels en formele procedures als het aankomt op het meenemen van belanghebbenden in het proces?
- Zijn de regels binnen het project formele of informele regels?
- Wie hebben deze regels bedacht?

Discourses

Het project is een vorm van Nature-based Solutions/Building with Nature/natuurlijke oplossing.

- Wat is jullie beeld van dit concept?
- Waarom is er voor zo een soort project gekozen?
- Wat zijn de voor- en nadelen van zulke projecten?
- Wat is volgens u het belangrijkste om met zulke projecten te realiseren?
- Wat is uw beeld van de organisatie van het project? Zou dit beter/slechter kunnen?
- Waarom is er voor zo een soort organisatiestructuur gekozen?

Environmental justice

Recognition justice

- Hoe worden mensen benaderd voor het project?
- Wie worden gezien als relevante actoren en wie niet?

Procedural justice

- Hoe gaat de procedure van de besluitvorming?
- In hoeverre ontvangen belanghebbenden informatie (transparantie)?
- Zijn er beslissingen die u achterhoudt voor sommige groeperingen? En zo ja, wat is de reden hiervoor?
- Wat wordt er gedaan met de input van belanghebbenden?
- In hoeverre is het mogelijk deze input mee te nemen in de besluitvorming?
- Waar selecteert u de mee te nemen input op?

Distributive justice

- Hoe zijn de kosten en baten verdeeld onder de belanghebbenden?
- Zijn er groepen/belanghebbenden die meer of minder voordelige uitkomsten van het project hebben/zullen ervaren? En dan heb ik het niet alleen over de uitkomsten van het project, maar ook over de effecten die tijdens de realisatie van het project naar buiten komen.
- Worden partijen die negatieve gevolgen ondervinden nog op een wijze gecompenseerd?

Overig

- Wat zijn de meningen van omwonenden/belanghebbenden over dit project? En dan niet alleen over de uitkomst van het project maar ook over de procedure ervan?
- Zijn er negatieve geluiden geweest vanuit de kant van de belanghebbenden? En zo ja, waar gingen deze over?
- Contactgegevens van andere betrokkenen in bijvoorbeeld workshops, vertegenwoordigers van omwonenden etc. vragen.

Appendix B

Interview guide relevant parties

- Op welke manier bent u betrokken (geweest) bij dit project?
- Wat zijn de belangen die u heeft (gehad) bij het project?

Environmental justice

Recognition justice

- Hoe bent u benaderd door de projectpartners?
- Op welke manier zijn uw belangen duidelijk geworden voor de projectpartners?
- Hoe werd de samenwerking over de besluitvorming van het project aan u beschreven?
- Heeft u het idee dat alle andere belanghebbenden op dezelfde manier zijn benaderd?
- Hoe wisten de projectleden dat u een belanghebbende was bij het project?

Procedural justice

- Wat kon u als belanghebbende doen om uw interesses te laten horen?
- Hoe werd u op de hoogte gebracht van de opties die u als belanghebbende had?
- In hoeverre was het gemakkelijk om deel te nemen aan de besluitvormingsprocessen?
- Op welke manier vond de samenwerking plaats met de projectpartners?
- Waren er nog andere belanghebbenden die samenwerkten aan het project?
- In hoeverre zijn uw ideeën meegenomen in de uiteindelijke besluitvorming?
- Wat is er gedaan met de door u geleverde input?
- Waar werd de mee te nemen input op geselecteerd?
- Waren er nog verschillen tussen hoe uw ideeën en ideeën van andere belanghebbenden zijn meegenomen in de uiteindelijke besluitvorming?
- Was de volledige kennis van het project transparant voor u?
- Waren er beslissingen die voor u achtergehouden werden? En zo ja, waar gingen deze beslissingen over?
- Zijn er nog partijen geweest waarmee de projectpartners op een andere wijze hebben samengewerkt? En zo ja, wat is hier de reden van geweest?

Distributive justice

- Wat zijn de gevolgen van het project voor u geweest?
- Heeft u nog overlast ervaren tijdens het proces van het project?
- Heeft u wat moeten inleveren als gevolg van de uiteindelijke uitkomst van het project?
- Heeft u wat erbij gekregen als gevolg van de uiteindelijke uitkomst van het project?
- Bent u gecompenseerd voor de lasten die u heeft ondergaan tijdens het proces?
- Bent u gecompenseerd voor wat u in heeft moeten leveren achteraf aan het project?

Overig

Hoe kijkt u terug op het project en de samenwerking die tijdens het project plaatsvond?

Wat is uw mening over de besluitvormingsprocessen die tijdens het project plaatsvonden?

Heeft u nog van andere belanghebbenden gehoord hoe zij op het project terugkijken?