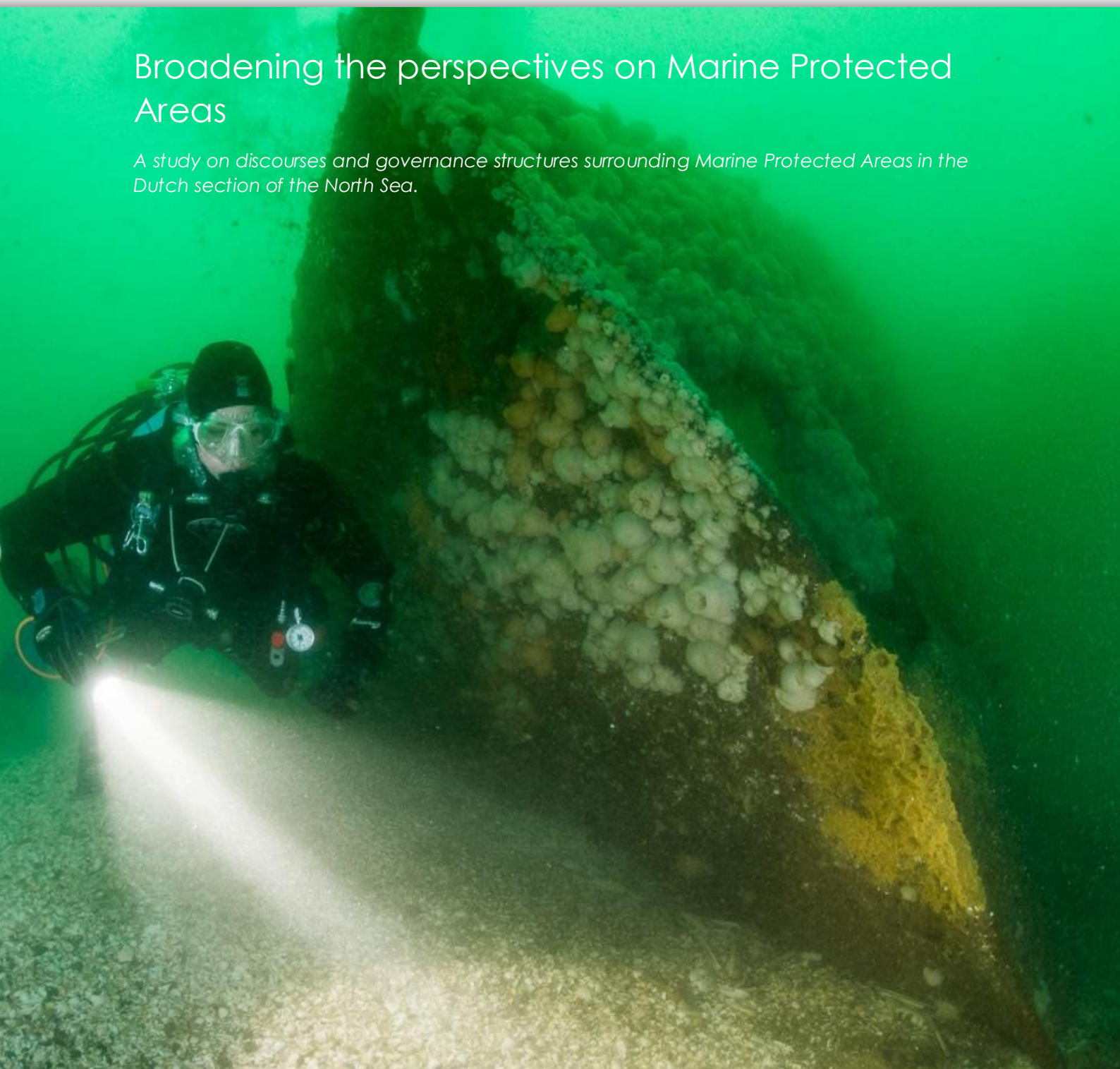


# Broadening the perspectives on Marine Protected Areas

*A study on discourses and governance structures surrounding Marine Protected Areas in the Dutch section of the North Sea.*



*Picture Cor Kuyvenhoven, 2015*

## Master Thesis

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Not only has this MSc. thesis broadened the perspectives on Marine Protected Area policies on the Dutch section of the North Sea, it has also broadened my personal view on academic thesis writing. Writing your MSc. thesis is about so much more than having the academic skills to conduct a full research. It is also a personal journey of getting to know yourself; your strengths and your weaknesses. Although I could have continued to work on this research for months, I have found that writing your thesis is also about setting deadlines and accepting that enough is enough. I have gotten to know a subject I am very passionate about and are given the opportunity to get to know people within this field who share the same passion. Therefore, working at your thesis subject does not end with the deadline of handing it over and I hope to keep continue working in this field of marine governance.

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## Abstract

The North Sea: besides from being one of the ecological richest, it is also one of the most intensive used seas in the world. The Dutch North Sea is subject to a dense amount of social and economic spatial claims, which reduce North Sea biodiversity and resilience. To protect its ecological values, a high expected and dominant tool is the establishment of Marine Protected Areas (MPAs) under the Natura 2000 legal framework. Indeed, designation of these Natura 2000 MPAs looks promising, as they already cover a large surface. However, the areas are plagued by paper park policies: they mainly exist on paper as the consequence of a multi-annual policy gap between designation and implementation of management measures. Moreover, MPAs are claimed to be false panaceas: a one-size-fits all solution for marine conservation. This thesis addresses these issues by the claim that *'the key to resilience is diversity, both in species in ecosystems as institutions in governance structures'*. Drawing on the theory of Policy Arrangements, the perspectives on Dutch MPAs on the North Sea will be broadened by investigating the discourses and governance structures of current and new protection initiatives. Analysis showed that a broad range of initiatives with the ability to reduce paper park policies exist, but cannot serve as a solid complement or replacement to current dominant and ineffective Natura 2000 MPA policies yet, due to their ad-hoc character and limited institutionalisation. Conclusions and reflection explore the future of North Sea protected area management and discuss steps to be taken to translate these initiatives into institutionalized policy arrangements able to realise a long term balanced relationship between ecological, economic and social values of the North Sea.

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## List of abbreviations

<b>CFP</b>	Common Fisheries Policy
<b>CPR</b>	Common Pool Resource
<b>DDNZS</b>	Foundation Dive the North Sea Clean (in Dutch: <i>Stichting Duik de Noordzee Schoon</i> )
<b>EA</b>	Ministry of Economic Affairs
<b>EC</b>	European Commission
<b>EEZ</b>	Exclusive Economic Zone
<b>eNGO</b>	Environmental Non-Governmental Organisation
<b>EU</b>	European Union
<b>FIMPAs</b>	Fishery Measures in Protected Areas
<b>ICES</b>	International Council for the Exploration of the Sea
<b>IDON</b>	Interdepartmental Directors North Sea Consultative Body (In Dutch: <i>Interdepartementaal Directeuren Overleg Noordzee</i> )
<b>I&amp;E</b>	Ministry of Infrastructure & Environment
<b>IMARES</b>	Institute for Marine Resources and Ecosystem Services
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources
<b>LiNSI</b>	Living North Sea Initiative
<b>MFSU</b>	Multi-Functional Space Use
<b>MPA</b>	Marine Protected Area
<b>MPAG</b>	Marine Protected Area Governance
<b>MS</b>	Member State
<b>MSFD</b>	Marine Strategy Framework Directive
<b>NGO</b>	Non-Governmental Organisation
<b>NIOZ</b>	in Dutch: Nederlands Instituut voor Onderzoek der Zee
<b>NSF</b>	North Sea Foundation
<b>Parliament</b>	I <sup>st</sup> and II <sup>nd</sup> Chamber
<b>PAA</b>	Policy Arrangement Approach
<b>SAC</b>	Special Areas of Conservation
<b>SPA</b>	Special Protection Areas
<b>VIBEG</b>	In Dutch: Visserijmaatregelen in Beschermde Gebieden Noordzee
<b>WWF</b>	World Wildlife Fund



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**Figure 1:** 'Blue Marble'. Famous photograph of the Earth taken by the Apollo 17 crew in 1972. Blue Marble is famous, because for the first time it shows the planet Earth as a whole (NASA, 1972). Symbol of the Earth's beauty, but also fragility and inspiration for this MSc. Thesis.

# 1. Introduction

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## 1.1 The need for marine conservation

'The Blue Marble' (figure 1) is regarded as one of the most iconic and influential photographs taken in human history. For the first time it shows an out of space image of planet Earth – our home – as a whole (NASA, 1972). Immediately striking is the blueness of the Earth, representing the enormous expanse of the world's oceans. 71% of the Earth surface is covered by the oceans, making it the largest habitat of this planet. Oceans contain a huge variety of marine species, many of which yet to be discovered. Furthermore, oceans provide vital life supporting goods and services: they produce one third of the oxygen we breath, regulate the global climate by serving as carbon sink, are an essential source of protein supply, sustain global economies and livelihoods and support many cultural and leisure activities (Toropova, 2010; CBD, n.d.). Until a few decades ago it was believed that a space so open and large must contain infinite resources and services.

However, this traditional view of the oceans as limitless and inexhaustible has started to contradict with today's reality. The previous century has shown a worldwide increase and intensification of offshore maritime activities, such as fishing, shipping, oil-, gas- and sand extraction and offshore energy production. This increase in spatial claims at sea has put global marine ecosystems and its resources under severe pressures, leading to major problems of overexploitation and habitat degradation. Today, there is no space of ocean left being unaffected by human activities. Therefore, the need to protect the marine environment is high: currently, oceans are amongst the most threatened ecosystems of this planet and it is expected with human population levels rising to 9 billion, that this pressure on coastal and marine systems will further increase in the future (Toropova, 2010) (Smith et al., 2006; Toonen, 2013).

Consequently, ocean protection has grown to be a priority issue on the agenda of international and national governments. Recognition occurred that the increasing tensions between economic activities and nature conservation at sea, asks for the development of management tools to sustain marine resources and ecosystems in the future. This has set the stage for marine governance, which is defined by van Leeuwen and van Tatenhove (2010: 591) #58} as *"the sharing of policy making competences in a system of negotiation between nested governmental institutions at several levels (international, supranational, national, regional and local) on the one hand, and state actors, market parties and civil society organizations on the other in order to govern marine activities and their consequences"*.

Today, one of the most promoted management tools of marine governance to address ocean degradation is a Marine Protected Area (MPA). In these areas human activities are restricted or tightly regulated and thereby governments can ensure preservation of habitats and species, prevent (further) degradation of and restore marine ecosystems and biodiversity (Toropova et al., 2010). Although there is no unequivocal definition of a MPA, the most widely cited definition is developed by the International Union for the Conservation of Nature and Natural Resources (IUCN):

*“An area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment” (Dudley, 2008: 8).*

In 2010, 193 governmental bodies ratified a replenishment to the International Treaty of the Convention on Biological Diversity (CBD) held in 1993, in which they adopted the conservation targets of: 1). the establishment of Marine Protected Areas representing 10% of the global marine and coastal areas, 2). through establishment of an effectively managed and ecologically representative network of MPAs by 2020, with the obligation to translate these goals into national strategies and action plans within two years (CBD, 2010).

Also the Netherlands are a contracting party to the CBD and, as a bordering country of the North Sea, has adopted national targets for establishing Marine Protected Areas. The North Sea is a case of particular interest: the relatively small and shallow sea supports a dynamic ecosystem, making it one of the ecological richest and most productive seas of the world. However, it is also one of the world's intensively used seas, home to a wide range of economic activities and a variety of users (Lindeboom, 2015). These economic activities leave their mark on the resilience of the North Sea ecosystem. Especially industrial fishing activities are considered to be the most significant human activity causing change and reducing resilience of the North Sea system (Toonen, 2013). Therefore, in order to sustain the rich biodiversity of the North Sea, marine governance through means of MPAs is an important management challenge to create a more balanced relationship between the ecological and economic functions of the North Sea.

## 1.2 Problem Statement

### 1.2.1 Gap between theory and practice

Regardless the acknowledged necessity and international agreements to implement MPAs as management tools to conserve the resilience and biodiversity of the marine environment, establishing them is a complex and challenging arrangement. This difficulty has much to do with the ‘Tragedy of the Commons’, one of the most influential principles within the history of environmental sciences. The theory is introduced by a paper of Garret Hardin in 1968 and states that the users of a Common Pool Resource (CPR) – a resources characterized by open access; such as the oceans – are caught in an inevitable downwards process that ultimately would lead to the overall destruction of the resource on which they depend (Hardin, 1968). He claimed that each user of a common would act out of self-interest by maximizing personal benefit, without taking into account the best interest of the whole group. Ultimately, this would lead to a situation where individual profits result in a common loss as a consequence of overexploitation and/or degradation of the resources in a common. To prevent this tragedy, Hardin suggested two solutions for managing a common (Feeny et al., 1990):

1. Privatization; converting common property in a private enterprise.
2. Socialism; continue to keep the common a public property, to which the government can allocate legal rights of entry and use.

He concluded that if we do not act in one of these two ways *"freedom in the commons brings ruin to all"* (Hardin, 1968: 1244).

In case of ocean management, privatization raises an ethical dilemma. Because the question who should and could take ownership of the global oceans, and would thereby take the responsibility to act according to the best common interest of the oceans instead of its personal benefit, is not an easy if not impossible question to answer. In the ocean context, socialism currently brings the solution to the field of marine governance: at international, regional and national levels governmental bodies allocate rights of entry and use of marine resources through the implementation of MPAs.

However, despite significant steps taken at multi-level governmental scales and a theoretical sound approach to ocean management, the effectiveness of MPAs for protecting the world's oceans is largely criticized. Extensive scientific research has been done on MPA creation, benefits and success, but successful examples are rare (see for instance Pomeroy et al., 2004; McClanahan et al., 2007; Banks and Skilleter, 2009; Hargreaves-Allen et al., 2011; Rife et al., 2013). Findings show that the spread and coverage of MPAs fail to reach conservation targets: at the end of 2010 only 1.17% of the world's oceans were designated as MPAs, reason for the signatory countries of the CBD to extend the 10% deadline from 2012 to 2020 (Rife et al., 2013; Chuenpagdee et al., 2013). Furthermore, spatial implementation of MPAs is rather fragmented and does not always represent ecological hotspots, resulting in little evidence for an integrated system of protection (Toropova et al., 2010). This raises doubts about what MPAs can offer.

When taking a more detailed look, it becomes clear that MPA establishment is plagued by two issues.

Firstly, the most important criticism for MPA failure is that they are 'paper parks': the areas simply exist on paper and are drawn into maps, but in reality they do not effectively restrict access or exploitation and therefore add very limited value to the actual protection of the enclosed environment (Rife et al., 2013). Rife et al. (2013) points out that as the 2020 10% deadline is coming closer, nations rush into MPA establishment for the sake of meeting the deadline, rather than the goal of improving oceans health. However this hasty implementation creates a false sense of protection. He claims that when insufficient resources are available for design, management and enforcement of the parks, the mere establishment does not guarantee their success and consequently, will only exist on paper.

Secondly, the concept of a MPA is plagued by ambiguity: many actors hold different perspectives or *discourses* on what a MPA is or how it should look like. There exist no singular definition or format of a MPA. They can take many sizes and formats, ranging from complete no-go zones where any form of human activity is excluded to multi-use areas in which specific economic or recreational activities are allowed. Furthermore, their protection objectives vary widely, ranging from biodiversity conservation and fisheries management to habitat restoration and tourism development (Toropova et al., 2010; Day et al., 2012; Toonen, 2013). In international agreements MPAs are loosely defined to leave the level of protection flexible and open to the interpretation of contracting parties (Lutchman and Scherr, 2008). However, the marine environment is used for many purposes and therefore falls under the interest of a large and diverse group of stakeholders who all have their own understanding of a MPA. Managing a single marine space in



the midst of multiple and competing uses and interest can therefore be a major challenge. Therefore vague terminology and objectives can easily result in power struggles between the stakeholders, who try to set the terms to their own interest and move the discussion away from the initial aim of the MPA (Toropova et al., 2010; Chuenpagdee et al., 2013)

These issues of paper park policies and the ambiguity of MPA occurrence, has resulted in a situation where governments are eager to fixate the MPA concept in legal rules and guidelines. However, this governmental tendency to make the concept of a MPA explicit in its design, seems to fuel the debates even more. They are being criticized as a false panacea: *“a one-size-fits-all approach to marine conservation that fails to address many critical marine management issues”* (Rossiter and Levine, 2014: 196).

### 1.2.2 The Case of the Dutch North Sea

These issues of paper park policies and finding an effective approach for dealing with the concepts' ambiguity are no exception for the Dutch implementation of MPAs on the North Sea. The following press release of May 2015 gives a good indication of the current situation on the North Sea:

*“Pok Pok: it sounds like a hail storm, but it is the sound of rotten eggs. The Arctic Sunrise – one of Greenpeace campaigning vessels – is under attack by several mischievous boys as the ship seeks shelter for severe weather in the port of Den Helder early May this year. The fishing community is angry at Greenpeace for their recent North Sea campaign, where they threw rocks on the North Sea reef area the Cleaver Bank – ‘the last real Dutch wilderness’ according to Greenpeace.” “Greenpeace thinks it is about time with the Cleaver Bank: No more paper parks, but an actual protected area.”*

**De Volkskrant, 16 May 2015**

The Cleaver Bank is a large natural reef in the North West of the Dutch North Sea, consisting of gravel and glacial boulders (Aarsen, 2015). The hard substrate of the rocks creates a dynamic area, attracting high levels of biodiversity. Therefore, in 2008 the Netherlands assigned the area as a Marine Protected Area under Natura 2000 legislation: the EU legal framework that aims to establish an ecological network of protected areas across Europe (Olsen et al., 2013) . Besides from the Cleaver Bank, five other areas in the Dutch section of the North Sea are registered as Natura 2000 site (Dotinga and Trouwborst, 2009). On a North Sea map an impressive result is witnessed: 19% of the surface has been registered as protected area (Noordzeeloket, n.d. a) . However Dutch MPA policies are characterized by a multiannual gap between registration and actual protection of a Natura 2000 site, resulting in a very limited amount of North Sea space that is currently operational as a protected area. With their action, Greenpeace aimed to create public attention to the current paper park situation and thereby put the Dutch government under pressure to implement truly effective MPAs (Aarsen, 2015). However, this is easier said than done, since the Dutch case is characterized by many North Sea users, that all have different North Sea interests and therefore different ideas on how a MPA should take form (Abspoel, 2015).

### 1.2.3 Failure due to Governance

The slow establishment rates, their relative lack of effectiveness and characterization as ‘paper parks’ raises doubts about what MPAs can offer for the North Sea (Chuenpagdee et al., 2013). In this regard MPA

researcher PJS Jones introduces an important statement. He argues that MPA failure is not so much inherent to the concept of a MPA itself, instead he claims that it is important to investigate whether and how this failure is related to the way(s) in which MPAs are governed (Jones et al., 2013a). Therefore, key concept for the effectiveness of North Sea marine parks is MPA Governance (MPAG). Whereas governance is defined as:

*“Steering of human behaviour through combinations of people, state and market incentives in order to achieve strategic objectives”* (Jones, 2013a: 1).

In general three main approaches of governance are distinguished in the context of protected area governance (Jones et al., 2011):

1. *Top-Down*: state led steering through implementation of laws and other regulations to ensure that biodiversity and natural resources are legally protected against degradation and destruction.
2. *Market-Based*: steering the protection of biodiversity and natural resources through economic incentives and initiatives and is often characterised by attaching an economic value to natural resources.

These first two types of MPA governance highly correspond with Hardin's suggested solutions of socialism (top-down steering) and privatisation (market-based steering) to prevent a tragedy within a common. However, so far these proposed solutions have not yielded the desired outcome for MPAs on the North Sea. In the past, Hardin's arguments for preventing a tragedy has been criticized as oversimplified and rational (Dietz, 2003). Important lessons from empirical research on sustainable resource management has shown that 1). Both privatisation and government ownership are not always proven to prevent degradation of a common. Different examples showed that non-governed open access resources were similar degraded when they were governed by governmental steered regimes (Ostrom, 1999). Moreover, 2). There are more solutions for common property management than Hardin proposed. Famous research done by Elinor Ostrom on Common Pool Resource (CPR) management has shown examples in which these resources were sustainably managed for centuries by self-organizing people or civil society, through implementation of institutional arrangements, governed by stable communities. Thereby, she proposed a third option for CPR management: self-organising institutions, in which an institution refers to the way humans organize activities or structure interactions (Dietz, 2003; Ostrom, 1999). This third option highly corresponds to a third approach of protected area governance (Jones et al., 2011):

3. *Bottom-Up*: steering the protection of biodiversity and natural resources through initiatives from citizens and society. This type of steering is characterized by decentralised decision making, community-based management and empowerment of local people

Until now, MPA governance on the North Sea has largely taken place by a top-down and fixed governmental approach. Leading governmental framework for implementing these areas is the EU Natura 2000 law, that obliges its Member States to install Natura 2000 reserves in their marine basin (Dotinga and Trouwborst, 2009). In this research it is expected that the current focus on top-down governance structures for MPA implementation on the North Sea and fixed definition of the MPA can result in a tunnel vision in which other, maybe also effective initiatives that live in society are not taken into consideration. In order to reduce the

current ineffectiveness and paper park policies, we need a new philosophy to implement MPAs (Rife et al., 2013). Based on the empirical research of 20 MPA cases across the globe, Jones et al., {2013a #25} make an important argument in this context.

### 1.3 Research assumptions

Indeed MPAs are no panacea and therefore MPA governance should not be focused on finding this one solution or *one-size-fits-all* governance approach to marine conservation. Because the circumstances in which they are implemented also vary widely. Instead this research transforms the ambiguity of the MPA concept into its strength, by moving beyond isolated arguments of which governance approach is 'right' or 'best' and develop frameworks in which the steering roles of states, markets and civil society are combined. Thereby Jones et al. (2013b; 2013a) makes two statements that will be leading throughout this research:

- I. *"In the face of strong driving forces, rather than relying on particular types of incentives and institutions, it is important to recognise that **the key to resilience is diversity**. Both of species in ecosystems and institutions in governance systems (Jones, 2013b: 1)."*
- II. *"a combination of governance approaches is necessary to effectively achieve strategic conservation objectives" (Jones, 2013a: 2).*

In ecological terms resilience is defined as *"the ability of an ecosystem to absorb shocks, resist phase shifts and regenerate after natural or human-induced disturbances (Nyström, 2000)*. According to these statements resilience in governance systems follows the same rule: *"Resilience in MPA governance derives from employing a diversity of inter-connected incentives, forming a complex web of institutional arrangements"* (Jones, 2013b: 12).

Thereby, the ecological diversity in MPAs is interwoven with the diversity of the socio-political context in which they are implemented. Combining top-down, market-based and bottom-up governance methods for MPA management, will create space for new or alternative incentives and stimulate institutional diversity. It enables MPA policy makers to move away from ideological debates of whether we should rely on the 'strong hand' of the state, the 'invisible hand' of the market or the 'democratic voice' of the people and instead focus on customized development and the ecological needs of the MPA. Ultimately, this will result in resilience to the overall socio-ecological system (Jones et al., 2011; Jones et al., 2013b). However, in case of the North Sea, it remains a question how these different approaches can be effectively used to counterbalance current paper park policies.

### 1.4 Research Objective and Research Questions

In order to contribute to possible solutions to paper park ineffectiveness on the Dutch section of the North Sea, and improve the overall resilience of the socio-ecological North Sea MPA policies, the objective of this research is to investigate the perspectives on and institutionalisation of current and alternative approaches



to Dutch MPA policies, in order to broaden the perspectives on Dutch MPA design and governance approaches.

To fulfil this aim, two concepts are leading throughout this research: discourses and governance. Firstly, discourse analysis since this study aims to investigate the different perspectives surrounding MPA policies and establishment in the Dutch section of the North Sea. A 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: 44). Secondly, governance, and in particular MPA governance, since the hypothesis of this study claims that current paper park failures are not so much inherent to the concept of a MPA itself, but is related to the governance structures and mixing of MPA policies. According to Jones effective MPA governance is achieved by installing a diversity of governance structures. But he does not specify how this diversity can be measured and institutionalized in dominant MPA policy arrangements.

This results in the following twofold main research questions of this study:

- I. *On which discourse(s) and governance structures are current Dutch policies regarding the implementation of marine protected areas (MPAs) in the Dutch section of the North Sea based and*
- II. *How are alternative stakeholder discourses supported or in conflict with (the) dominant governance structure(s) and discourse(s) regarding marine protected areas in the Dutch section of the North Sea?*

In order to find a structured answer to the first research question, it is important to analyse current Dutch MPA policy arrangements, for which the following sub-questions are leading:

- *How are international legal MPA obligations institutionalized in current Dutch policy arrangements?*
- *Which governance structure(s) is/are leading regarding the implementation of MPAs in the Dutch North Sea?*
- *What is/are the main stakeholder discourse(s) within Dutch policy arrangements regarding the implementation of MPAs within the Dutch North Sea?*
- *How are the(se) stakeholder discourse(s) and governance structure(s) related to the current paper park policies on the Dutch North Sea?*

In order to find a question to the second research question, alternative perspectives on MPA establishment on the Dutch section of the North Sea will be analysed. This will be done according to the following sub-research questions:

- *What alternative stakeholder discourses exist for the realization of marine conservation on the Dutch North Sea and what sort of initiatives do these discourses generate?*
- *How are these alternative stakeholder discourses supported or in conflict with current dominant MPA policy arrangements?*

## 1.5 Relevance of the Research

From a social point of view this research is relevant because currently the Dutch North Sea is increasingly under pressure as a consequence of unsustainable economic-ecological interactions. This leads to overexploitation, habitat destruction and a marine ecosystem that is unable to sustain marine resources and biodiversity in the future. So far, Dutch MPA policies have been little effective in reaching conservation targets and paper parks are the result. Therefore, exploring new approaches to find a more sustainable relationship between economic and ecological functions on the Dutch North Sea is important. However, being one of the world's busiest seas, the North Sea is characterised by many users, pursuing different often competing interests. Consequently, Dutch North Sea stakeholders have different perspectives on MPA design. This increases the difficulties of organizing, agreeing and enforcing rules. Therefore, it is an important challenge to explore a combination of initiatives and governance approaches to reduce paper park policies on the Dutch North Sea.

From a scientific point of view this research is relevant, since it provides insight in whether and how a diversity of governance approaches can be effectively combined, in such a way that it provides space for the institutionalisation of a variety of stakeholder initiatives that could offer solutions to complex issues of common pool resource management. Applying this research on the case of the Dutch North Sea could generate insights and possible solutions to paper park policies that are transferable to other similar cases.

## 1.6 Outline

The second chapter will briefly discuss the research scope, design and methods used to answer the research questions.

The third chapter explains the conceptual framework that is used to analyse the results of this research. This framework functions as the theoretical foundation for finding a structured answer to the research questions provided. Used framework is the Policy Arrangement Approach of van Tatenhove et al. (2000b). For this study the framework is slightly adjusted to insert the leading concepts of MPA governance and discourses. Next the fourth chapter provides some basic but fundamental knowledge on the characteristics of the Dutch section of the North Sea, and leading (inter)national legislative framework that are important for understanding the MPA policy context.

The fifth chapter provides a detailed overview of the current status of Dutch North Sea MPA policies and provides a deeper understanding of prevailing paper park policies. The sixth chapter provides an analysis based on stakeholder interviews of the governance structures and discourse(s) of the current Dutch MPA policies by using the PAA. Next the seventh chapter provides insight in alternative discourses and upcoming trends for organising North Sea protected area management and chapter eight will discuss how these alternatives collaborate or are in conflict with the current dominant Dutch MPA policies.

Finally, all the information will be combined in the conclusion chapter, resulting in an answer on the research questions asked. The study is finalized with a reflection on this study and in which the conclusion is being translated into recommendations and a brief reflection on the overall study.

## 2. Research Methods

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The research methods will explain the methodological choices that have been made for conducting this research. Having a clear research methodology is important, because it serves as the backbone of the research, and ensures a solid and complementary research outcome.

This research is constructed according to a qualitative research approach. In broad terms, this describes an interpretative research approach that concerns the examination of the human environment, individual experiences and social processes (Wester, 2004). It is built on the premise that humans attach meaning to their surrounding through their own interpretations and experiences of this surrounding. In case of this study this is relevant, because it aims to identify stakeholder opinions, perspectives and experiences on Dutch MPA policies, in order to generate a broadened understanding of the governance structures and discourses influencing and shaping the Dutch MPA policy domain.

Empirical research is selected as useful method to study the Dutch MPA policy domain on the North Sea. Within the empirical research domain, observations of society are used to investigate what happens in reality; i.e. *'the empirical reality'*. In this regard a case study approach is relevant. Within the qualitative and empirical research domain it is an useful tool for investigating a complex problem of which very limited knowledge is available or is highly fragmented, but you still want to gain a complete overview of the research subject (Kumar, 2014). The selection of the North Sea case study is relevant, because the combination of current paper park policies and the presence of a large amount of conflicting stakeholder interests due to the extensive use of North Sea space, makes it an important challenge to investigate context specific approaches for improving North Sea MPA effectiveness. Due to time limitations and the resulting need for scoping, only the Dutch section of the North Sea is chosen in order limit the complexities of stakeholder interactions and policy frameworks.

Leading for structuring this research are the twofold research questions. To be able to broaden the perspectives on Dutch MPA policies and approaches, it is needed to gain a detailed understanding of the current Dutch MPA policies, their governance structures, discourses and inefficiencies. This analysis will result in a deepened understanding on the occurrence of paper park policies and will shape the foundation for exploring new, alternative approaches and perspectives to protected area management on the North Sea, and their capability to improve the effectiveness of Dutch MPA policies, ultimately resulting in a healthier and more resilient North Sea ecosystem.

Several data collection methods have been chosen to find a structured answer to the research questions:

### ***Literature study***

Especially for the theoretical part of this research scientific literature is and will be studied. Theory on the Policy Arrangement Approach is studied for developing a framework for the analysis of governance structures and discourses of Dutch MPA policies and implementations. Furthermore literature review is relevant for analysing MPA implementation structures - both on the international as the Dutch national level. Furthermore literature research is used in order to get to know the North Sea, its ecological values,

user functions and most important stakeholders. This type of data has mainly been obtained from grey literature: websites, governmental reports, newspaper articles and policy documents will be studied.

### *Expert interviews*

The empirical data of this research is collected by means of stakeholder interviews. These interviews have been structured by using a pre-developed topic list, covering questions to analyse all four dimensions of a policy arrangement, that together serve as a basis to analyse governance structures and MPA discourse within the Dutch society. This data collection method is relevant because it is able to elicit information, beliefs and opinions from the North Sea stakeholders regarding their vision on MPA policies. To generate a holistic and representative overview of governance structures and stakeholder discourses on current and alternative MPA approaches, stakeholder respondents have been selected based on representing a complete overview of the MPA stakeholder arena on the Dutch North Sea. X interviews have been conducted, within five different stakeholder sectors: the Dutch government, environmental NGOs, the fishery and market sector, scientific institutes and separate interviews with stakeholders implementing alternative initiatives for protected area management on the North Sea. A complete overview is listed in the table below.

Sector	Institute	Respondent
<b>Science</b>	<ul style="list-style-type: none"> <li>• IMARES – Han Lindeboom</li> <li>• Bureau Waardenburg</li> </ul>	<ul style="list-style-type: none"> <li>• Han Lindeboom</li> <li>• Joop Coolen</li> <li>• Oscar Bos</li> <li>• Wouter Lengkeek</li> </ul>
<b>Dutch Government</b>	<ul style="list-style-type: none"> <li>• Rijkwaterstaat</li> <li>• Ministry of Economic Affairs</li> <li>• Ministry of Infrastructure &amp; Environment</li> </ul>	<ul style="list-style-type: none"> <li>• Waldo Broeksma</li> <li>• Vincent van der Meij/ Hans Nieuwenhuis</li> <li>• Bas Weenink</li> </ul>
<b>Environmental NGOs</b>	<ul style="list-style-type: none"> <li>• WWF</li> <li>• Greenpeace</li> <li>• North Sea Foundation</li> <li>• Dive the North Sea Clean</li> </ul>	<ul style="list-style-type: none"> <li>• Emilie Reuchlin-Hugenholtz</li> <li>• Frederieke Flek</li> <li>• Thomas Rammelt</li> <li>• Ben Stiefelhagen &amp; Klaudie Bartelink</li> </ul>
<b>Fishery &amp; market sector</b>	<ul style="list-style-type: none"> <li>• Dutch Fishermen's Federation</li> <li>• VisNed</li> <li>• NOGEPA</li> </ul>	<ul style="list-style-type: none"> <li>• Durk van Tuinen</li> <li>• Pim Visser</li> <li>• Aart Tacoma</li> </ul>
<b>North Sea alternatives</b>	<ul style="list-style-type: none"> <li>• Marine Stewardship Council</li> <li>• North Sea Farm</li> <li>• LiNSI</li> <li>• Ekofish Group</li> </ul>	<ul style="list-style-type: none"> <li>• Hans Nieuwenhuis</li> <li>• Koen van Swam</li> <li>• Anne-Mette Jorgenson</li> <li>• Louwe de Boer</li> </ul>

### ***Observation***

In order to get a better understanding of the stakeholder interactions within the Dutch MPA policy domain, and to actually witness North Sea MPAs and ecological diversity, two types of observations have been done:

- Participating on a North Sea expedition to the Dogger Bank in September 2015, organised by Organisation Dive the North Sea Clean. During this expedition a wide range of North Sea stakeholders were on board to witness, monitor, clean and discuss the underwater world of the North Sea. During this expedition I made four dives on ship wrecks and the Dogger Bank to personally witness the ecological values of the North Sea underwater world
- Participant on the Workshop Building With North Sea Nature in June 2015. Here, representatives from the complete North Sea stakeholder domain were present to collaborate on a future vision and explore initiatives that combine the economic, ecological and other North Sea functions and values.

All the information obtained from interviews and observations have been developed in transcripts and were manually coded to identify MPA governance structures and discourses. This approach made it possible to analyse the obtained results and link them to the used PAA conceptual framework and finally answer the twofold research questions.

### 3. Conceptual Framework: The Policy Arrangement Approach

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To be able to answer the research questions, an understanding of certain concepts and theories is needed. This section explains these theories and concepts, together providing the analytical basis and conceptual framework of this study.

Throughout this research two concepts are leading: discourse analysis and governance. The former - discourse analysis, since this study aims to investigate the different discourses surrounding the environmental policies and design of marine protected areas in the Dutch North Sea. An understanding of this concept is needed to use it as a tool for investigating different stakeholder perspectives on marine parks. The later - governance, and in particular governance of MPAs, is an important concept for the establishment of marine parks. Their slow establishment rate, lack of effectiveness and characterization as 'paper parks' makes them a highly criticized tool for conserving our marine resources. Argument of this study is that their failure is not so much inherent to the concept of MPA itself, instead it is important to investigate how this failures can be related to the governance structures of MPA policies.

In this study the concepts of discourses and governance are merged into and investigated by a conceptual framework called the Policy Arrangement Approach (PAA), designed by van Tatenhove et al. (2000b). The framework is developed as a tool to enhance understanding of the interplay between stability and change in the field of environmental policy. Applying the framework can shed light on developments and renewal within a particular policy domain (Arts et al., 2006). Following van Tatenhove et al. (2000b) in this research the Policy Arrangement Approach is used to investigate the interplay between dominant and alternative perspectives on marine approaches to protected area management on the Dutch part of the North Sea and will serve as the analytical basis of this research.

#### 3.1 From government to governance

Until the middle of the 20th century, governments were seen as the only player that could and should steer society. This mode of 'government' strictly separated spheres of state, market and civil society. The state was responsible for the public interest, whereas the market served private interest and was based on competition and civil society focused on citizen interests and needs. The paradigm was one of hierarchy, characterized by top-down policy making and state-led steering of society. However, from the 1960s onwards, society and environmental problems became more complex. Driving forces for this increased complexity were processes of globalization and individualization. In the after war society, globalization had brought economic prosperity, but increasingly society became also aware of the undesired side-effects of globalization. Environmental problems such as the hole in the ocean layer, climate change and the famous publications *Silent Spring* by Rachel Carson – predicting the detrimental effects of pesticides on birds, showed society the environmental risks related to globalization. Where governments were able to control local pollution problems in the past, the state was seen incapable to properly regulate this new type of environmental risks, resulting in a decreased societal trust in the government for controlling risks. Furthermore, the increased welfare and education of civil society, promoted a more reflexive and do-it-yourself society. Civilians became more conscious of the risks involved with the increased environmental

problems, but the decreased belief of society in the capability of states to control these risks, also emphasized their do-it-yourself mentality (Arts and van Tatenhove, 2006).

Consequently, the relations between state, market and civil society became less static and started to intermingle. The result was a process of de-differentiation in which borders between the playing fields of state, market and civil society started to fade. Former public duties were transferred to market and society and their involvement in environmental policy making and steering was encouraged (Arts and van Tatenhove, 2006).

These changing interrelations and shifting power between state, market and civil society is referred to as a mode of 'governance'. Since the late 1990s, the concept gained popularity within environmental policies and has grown to be a subject of various interpretations and debates about advantages and disadvantages of its different approaches (for a selective overview see (Kersbergen, 2004; Kooiman, 2003; J. Pierre, 2000; J. Pierre, Peters, B.G., 2005; Treib, 2007). In more general terms it describes a change in actor constellation during the formulation and implementation of policies. The old paradigm of top-down, state-led steering no longer sufficed and a shift towards more bottom-up – with society, and market-based – economic incentives, approaches to shape and steer society took place (Jones et al., 2013a). State, market and civil society inevitably cooperate in steering and shaping society, for which new policy instruments such as public-private network arrangements and self-regulation are used. Thereby, traditional hierarchical policy arrangements coexist with more innovative policy arrangements, characterized by a government that negotiates with market parties and civil society (B. Arts, Leroy, & van Tatenhove, 2006). This new mode of governing society is characterized by shared responsibilities and differentiated power relations (Arts et al., 2006)

As already discussed in the introduction, this research distinguishes three modes of governance: top-down, market-based and bottom-up governance. Together, these modes are the leading categorisations for the analysis of governance structures in Dutch MPA policies on the North Sea.

### 3.2 Policy Arrangement Approach

In order to unravel the governance puzzle of Dutch MPA policies on the North Sea, an analytical search light is needed. This research has selected the Policy Arrangement Approach (PAA) designed by van Tatenhove et al. (2000b), as a useful framework to analyse the empirical results. The PAA is a theoretical framework that can enhance understanding of the interplay between stability and change within environmental policies. To understand and apply the framework on Dutch MPA policies, means to understand three important theoretical concepts upon which the framework is built: Institutionalisation, Political Modernisation and Policy Arrangements

#### 3.2.1 Theoretical Concepts

##### **Institutionalisation**

In the introduction an institution was already explained as a manner of organizing activities or structure interactions (Ostrom, 1999). In this line of argumentation Arts et al. (2006: 96) explains the process of institutionalisation as *“the phenomenon whereby patterns arise in people’s actions, fluid behaviour gradually*

*solidifies into structures and those structures in their turn structure behaviour*". Thereby institutionalisation is about the development of routines, fixation of patterns, rules and interaction. In the field of environmental policy it implies the settlement of relatively stable definitions of problems and their solutions. In other words it explains that environmental problems are often 'named' and 'framed' in a certain way, resulting in a predominant social definition of the environmental problem and its approach for solving it. Institutionalisation can also refer to the organisational aspect for structuring and approaching an environmental issues, which relates to stabilized procedures of stakeholder interaction or collaboration in the process of finding and implementing solutions to the problem (van Tatenhove et al., 2000b). For instance at the early 1970s environmental problems were framed as local and public health problems (water, air, noise pollution), which could easily be solved by technical end-of-pipe solutions. In organisational terms, the state was seen as the responsible actor to solve the environmental issues.

As the institutionalisation of environmental problems and their solutions may seem solid and fixed, key to institutions is that they are always temporary stable and gradually develop over time. Hence, they are subject to change and adjustment in society. For example, today environmental problems have grown to be global and complex issues instead of being local and easily solved. Additionally, the process of finding and implementing solutions, is recognised as a multi-stakeholder arrangements, emphasizing the collaboration between state, markets and civil society collaborates (Arts and van Tatenhove, 2006).

### **Political Modernisation**

The concept of Political Modernisation can be studied in various ways. This research follows the definition of Arts et al. (2006: 97), defining Political Modernisation as the *"structural processes of social change and their impact on the political domain"*. The political domain can be understood as the setting in which different societal groups (state, market, civil society) distribute resources (power), rules (institutions) and create meaning (discourses) in order to shape public life. Political Modernisation is used to structure and follow gradual developments within society. Over time several phases of Political Modernisation can be distinguished. Each of them is characterized by dominant views about politics, policy and the relations between state, market and civil society in steering and developing environmental policy. As a consequence of all kind of social, economic and political movements, these relations change over time, resulting in new modes of thinking of who should be responsible for shaping policies and steering society. These new modes of thinking are characterized by incremental change. This explains the concept of Political Modernisation as long-term background processes, that are able to cause a comprehensive transformation within the entire political domain, manifesting itself into day-to-day policy practices. This results in new patterns of interaction, new balances of power and new thoughts on solving environmental issues (Arts et al., 2006; van Tatenhove et al., 2000b). For instance, the shift from 'government to governance' is a typical process of Political Modernisation within environmental policy making (van Kersbergen, 2001).

### **Policy Arrangements**

At the heart of the Policy Arrangement Approach is the Policy Arrangement itself, which is defined as *"the temporary stabilisation of the organisation and substance of a policy domain at a specific level of policy making"* (Arts et al., 2000). In other words, policy arrangements are the structuring of day-to-day policy



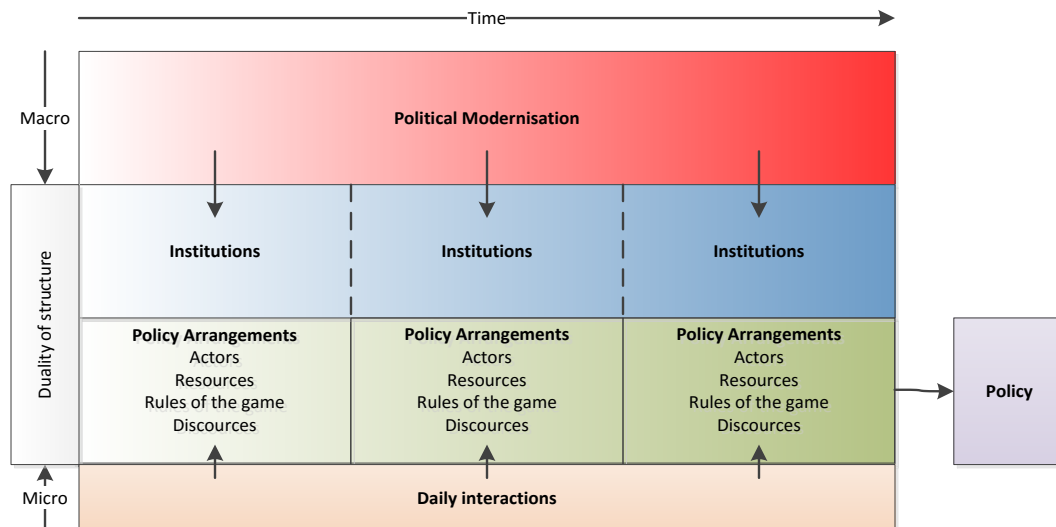
practices within a particular policy domain, eventually resulting in policies on the ground (van Tatenhove et al., 2000a). The policy domain includes all the policy practices surrounding a particular issue (Arts et al., 2000). In this research these are all the policy practices related to Dutch MPA policies on the North Sea.

### **Interaction Institutionalisation, Political Modernisation & Policy Arrangements**

The occurrence of policy arrangements is connected to previously discussed concepts of institutionalisation and Political Modernisation. Policy arrangements can be considered as the practical implementation of institutions, expressed in settled rules, interactions and narratives that shape a certain policy and in turn shape behaviour (Liefferink, 2006). Just like institutions, these arrangements change over time and are therefore *“temporary stabilisations in ongoing processes of institutionalisation”* (Liefferink, 2006: 47).

The way in which change occurs in institutions and policy arrangements is characterized by a ‘duality of structure’, meaning that change is the result of a two-way process. Leading is the distinction between structure – representing the societal macro structures of political modernisation, and agency – representing the micro scale of daily interactions between groups and individuals. The duality lies in the fact that at one side change of a policy structure is steered from the macro towards the micro level – in this case change is steered by processes of political modernisation, which gradually occurs and alters the overall ideas in which society and policies should be steered. It manifests itself at the micro level into day-to-day political and social processes. At the flipside, change of a policy structure is steered from the micro towards the macro level – meaning that small scale changes within human agencies can eventually steer large scale structural changes within the political domain. Hence, a policy arrangement is settled as the intermediate mode between structure (political modernisation) and continual day-to-day policy interactions (Arts and van Tatenhove, 2006; Arts et al., 2000). These policy arrangements and their interaction with political modernisation, institutionalisation and human agencies is summarized in figure 2.

This interaction suggests that also small change developments or groups are able to influence seemingly dominant structures. Hence, change in a particular policy arrangement is not only steered by top-down settled macro structures, but can also be a consequence of bottom-up micro interactions. So, both long-term and short-term social and political interactions are crucial phenomena for understanding stability and change within the field of environmental policies (Arts et al., 2000).



**Figure 2:** interplay between main theoretical concepts of Policy Arrangement Approach. Vertical dimensions show the interaction between macro and micro scales, known as a duality of structure. Horizontal shifts represent changing social and political structures over time, in this case representing a shift from 'government to governance'. All these interactions meet at the level of the policy arrangement, which eventually results in on the ground policies.

### 3.2.2 Dimensions of the Policy Arrangement Approach

The level at which change or stability within a policy is most visible, is at the level of the policy arrangement. The policy arrangement shapes the arena in which daily policy practices and interactions take place. Therefore, in order to understand stability and dynamism within an environmental policy domain, it is useful to analyse its policy arrangements (Arts et al., 2000). The Policy Arrangement Approach is an operationalized tool that enables the analysis of developments and renewal within a policy domain. It provides four analytical lenses through which the policy domain can be unravelled.

A policy arrangement can be divided into organisational and substantial aspects. The organisational aspect refers to the departments, instruments, procedures, division of tasks, competences and other arrangements necessary to organise a policy domain. The substantial aspect relates to the content of a policy domain, for instance its principles, objectives and measures. Analysing these substantial and organisational aspects, can be helpful in understanding the driving forces of stability versus change in a policy domain. These aspects are operationalized into the following four dimensions, whereas the former three describe the organisational and the later describes the substantial aspect of a policy domain (Arts et al., 2000):

#### I. Actors and Coalitions

Often, several actors and coalitions are involved in a policy arrangement. *Actors* participating in an arrangement can be distinguished as both governmental (state) and non-governmental (NGOs, science, markets and other non-state players) stakeholders. An *actor coalition* is a cooperation that exist between a group of at least two or more stakeholders (Arnouts, 2010). These groups are often bound by a shared policy discourse, resources and/or rules of the game. They often share comparable policy goals and participate in policy processes to achieve these goals. In general, there is one policy discourse and set of rules related to a policy domain, which dominate and determine the practice of the policy.

Some coalitions may support this dominant policy, while others try to challenge these. Depending on their position they can be divided into supporting or challenging coalitions (Arts et al., 2000; Liefferink, 2006). When actors within a coalition are able to make a significant change within a policy arrangement, these are called *policy entrepreneurs*. These entrepreneurs have the capacity to tackle a policy issue by combining or replacing it with an existing or newly developed policy alternative (Arnouts, 2010). In this research of MPA policy arrangements on the Dutch North Sea, the actor dimension provides insight in the stakeholders involved with Dutch MPA policies, and how they form network coalitions.

## **II. Resources: power and influence.**

Resources describe the tools of an actor or actor coalition to influence the outcome of the policy process. For instance, these are decision-making authority, knowledge, money, mobilization power, legislative power, being part of a network, time and innovativeness. The division of resources between actors, can give a useful indication of the division of power between actors in a policy domain. In this case, power refers to the capability of an actor or actor coalition to deploy and mobilise resources, and influence describe the success of these resources in determining the policy outcome (Arts et al., 2000; Liefferink, 2006). To have power or influence within a policy process is an important stakeholder capacity. It provides the opportunity to maintain or transform their social or physical surrounding, and more specifically to achieve certain policy outcomes. Besides from steering political decisions, power and influence can also be useful for dominating public debates, framing policy issues, setting agendas or changing the rules of the game (Arts et al., 2000). In this research of MPA policy arrangements on the Dutch North Sea, the resource dimension provides insight in the resources the actor and actor coalitions have access, how they use these to influence the ultimate decision-making outcome of MPA policies.

## **III. Rules of the Game**

The rules of the game define the policy arena of the policy actors. These rules clarify the borders, structures and procedures for the implementation of a certain policy. They describe opportunities and constraints of the policy actors to act and employ their resources within the domain. Thereby, the rules of the game determine how the 'political game' is played and which paths can be walked to reach a desired policy outcome. A distinction exists between formal and informal rules. The former represents fixed rules and legislations the stakeholders are obliged to follow, and the latter describes the predominant – but changing – political culture of informal rules and routines for interaction (Arts et al., 2000; Liefferink, 2006). In this research of MPA policy arrangements on the Dutch North Sea, the rules of the game dimension investigates the formal and informal rules for establishing Dutch MPA policies, and how these shape ultimate MPA decision-making procedures.

#### IV. Policy discourses

Crucial for answering the main question of this research is the understanding and practice of policy discourses. The field of discourse analysis is extensively researched and many different interpretations of the concept have come to exist. According to Arts and Buizer { 2009 #152} and Hajer (Hajer, 1995) key concepts are communication, framing, narratives, understanding and mode of talking. Prominent expert within the field of discourse analysis is Hajer, who defines a discourse 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 (1995: 44).”* Thereby, discourse analysis is a helpful instrument to make sense of the world around us, or policy domains in the case of this research.

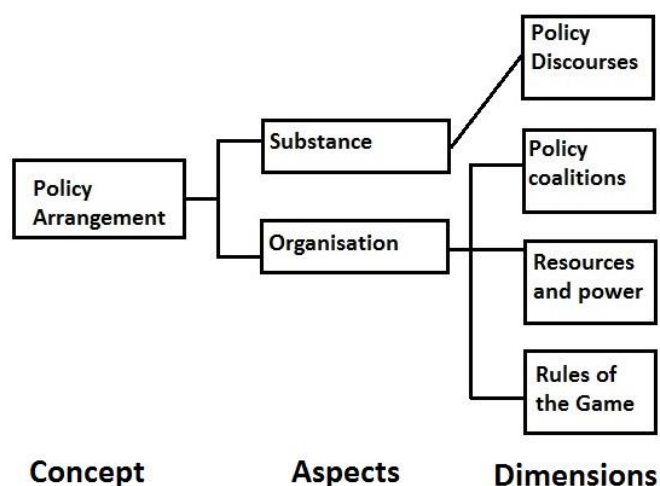
Core of a policy discourse is the realization that actors often hold different perceptions and interpretations of a certain policy problem and approaches for solving it. Especially the field of environmental issues illustrates the importance of policy discourses. These problems tend to be complex both in knowledge on their physical causes, occurrence and solutions, as in the wide arena of stakeholders involved in the issues. Uncertainties on the environmental issue at one side and the many stakeholders that try to give meaning to the issue at the other - preferably within the spheres of their personal interest, result in a plurality of problem definitions and approaches for solving the issue (Hajer, 1995).

Giving meaning to a policy discourse is divided into two separate levels of interpretation. First of all the actors in the policy arrangement try to give meaning to the policy concept itself (Arnouts, 2010). In case of this research, this relates to the many different concepts and ideas regarding the questions what is a MPA? And how should its design take form? Secondly, a policy concept is further operationalized by a policy strategy. These strategies reflect the ideas of stakeholders on how they think the policy should be put in practiced; it is about the shaping of the actual policy design for reaching the desirable situation (Arnouts, 2010) . In case of this research, it is expected that different governmental and non-governmental actors involved with MPA policies on the Dutch North Sea will have different visions on their implementation approaches. These discourse can exist parallel to each other, but often have competing characters (Arnouts, 2010). In relation to the conflicting interests of North Sea stakeholders, it is expected that they hold opposing discourses on MPA implementation.

In general a policy arrangement is characterised by one dominant policy discourse, responsible for setting the scene in which an issue is framed and approached. The content of this policy discourse is continuously challenged by other contesting discourses of stakeholders in the policy arena. These stakeholder try to give meaning to their discourses, by deploying resources and following the most efficient set of rules of the game, for influencing the policy outcome to make it compatible with their discourse (Arts et al., 2000).

In this research of MPA policy arrangements on the Dutch North Sea, discourse analysis is used to investigate the current dominating perspective on Dutch MPA policies, and alternative stakeholder perspectives for MPA management on the North Sea. Next, these alternatives are used to investigate how they are supported or in conflict with the dominating discourse for arranging MPA policies on the Dutch North Sea.

The discussed four dimensions of the policy arrangement are visualized in figure 3. Interesting visualization of the figure is the division between organisational and substantive dimensions of the policy arrangement. The combination of policy actors, resources and rules of the game distinguish the organisational character of a particular policy arrangement. Hence, analysing these dimensions can provide a deeper understanding of the stabilized patterns for planning and organising a policy arrangement. Insight in the dominating and alternative ideas on the content or substance of a particular policy is obtained by studying the stakeholder discourses regarding the policy arrangement.



*Figure 3: subdivision and operationalization scheme of the concept of a Policy Arrangement. Two main aspect of an arrangement are substance and organisation, which again are operationalized into four dimensions, together forming the crux for studying stability and change within a certain policy domain (Arts et al., 2000: 56).*

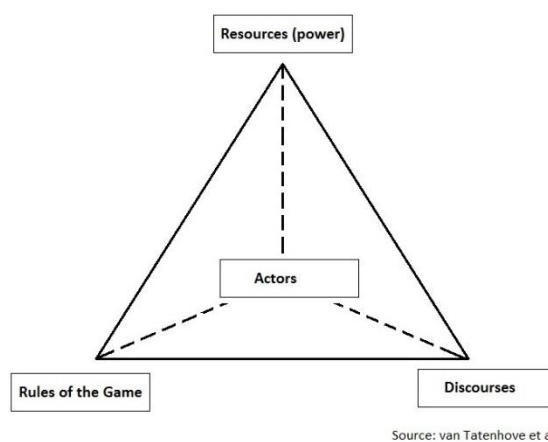
### 2.2.3 The PAA Framework – a tetrahedron

Together, these four dimension cannot simply be added to define a policy arrangement. The dimensions are inextricably interwoven and it is this interrelatedness between the domains that is essential for understanding the occurrence of a policy arrangement at a certain moment of time. This mutual influence is the core of the Policy Arrangement Approach conceptual framework and is symbolised by the tetrahedron in figure 4. The tetrahedron visualizes that if a change occurs in one of the dimensions, it will also induce a reaction in the other dimensions. To analyse the dynamics and bottlenecks of a policy arrangement, means to analyse all four of its dimensions (Arts et al., 2006; Liefferink, 2006). Understanding of how the mutual influence between the dimensions can occur, is briefly exemplified:

- Within the actor domain, the entry and/or departure of actors or a changing formation of actor coalitions can result in new ideas, challenging the dominant policy discourse. It can also result in a change of resource distribution between the actors and breach fixed relations of power and influence.
- Within the resource domain, the addition or disappearance of resources (e.g. knowledge, money, innovation) can cause a change in actor constellation, because it enables (new) actors enter or exit the policy arena .
- The same applies to a change in formal and informal policy procedures for organising a policy arrangement within the rules of the game dimension: additional or disappearing rules create or limit space on the policy playground for stakeholders to influence the policy outcome.

- Lastly, policy innovation can also be a cause of the introduction of new policy concepts, ideas or definitions of problems and solutions. In this case, new or alternative policy discourses for organising the policy are introduced and challenge the dominant discourse within the arrangement. These new discourses can bring in new types of resources (e.g. knowledge, skills, innovativeness) or may result in the formation of new actor coalitions.

These examples indicate how change in one dimension can induce change in the other dimensions. This interplay between the dimension, are the driving forces behind stability or change within a policy arrangement. There are many ways of influence between the dimensions, of which the precise occurrence is hard to predict (Arts et al., 2006). Therefore, understanding the dynamics and existence of a policy arrangement should be seen and analysed in the context of the policy domain.



**Figure 4:** The Policy Arrangement Approach conceptual framework. The tetrahedron was chosen as a symbol for the connection between the different elements of a policy arrangement (Arts et al., 2000).

The way in which the policy arrangement tetrahedron zooms into these four dimensions, presents a rather isolated picture of the operation of a policy arrangement. Changes within actor constellation, resources, rules of the game or discourses are not only a result of changing interactions on the level of daily policy practices. It should be taken into account that change is also influenced by broader social and political processes of political modernisation (Liefferink, 2006).

To sum up, stability and change within a policy arrangement, can be initiated from each of the four dimensions of the arrangement - that have changed as a consequence of internal or external drivers - and then sets of a chain reactions within the other four dimensions and ultimately on the level of the policy arrangement, in a way that needs to be researched empirically (Arts et al., 2006).

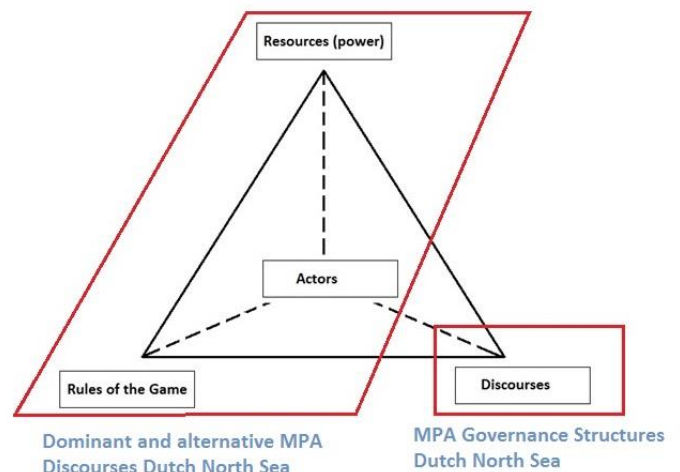
The next section will explain how the Policy Arrangement Approach is used to analyse stability and change within the Dutch MPA policy domain.

### 3.3 Conceptual Framework: The PAA for studying Dutch MPA policies

In this research *governance structures* and *discourses* are set as the central concepts for analysing inefficiencies in and perspectives on Dutch MPA policies. The conceptual foundation for researching and understanding the effects of the concepts on the MPA policy domain, is provided by the PAA.

By means of discourse analysis, it is aimed to investigate dominant and alternative (challenging) ideas on the design and establishment of MPAs in the Dutch part of the North Sea. By studying the governance structures, it is aimed to gain a better understanding of the organisational inefficiencies of current dominant Dutch MPA policies. Their paper park status makes current MPA policies little effective in reaching promised targets to protect North Sea ecological values. In the hypothesis of this study it is claimed that current MPA inefficiencies are not inherent to the concept itself, but are likely to be related to the dominance of ineffective governance structures for MPA organisation and implementation processes. Solutions for improving the effectiveness of these organisational structures, are sought in the combination of a diversity and integration of governance approaches. In the introduction these governance approaches were introduced as top-down, market-based and bottom-up structures. In this context, the Policy Arrangement Approach is expected to be helpful in (1) generating a detailed understanding of current MPA governance structures and why these are unsuccessful in MPA implementation on the Dutch North Sea, and (2) investigating and understanding the organisation and interaction of alternative governance approaches for tackling dominating inefficiencies.

This research merges Dutch MPA discourses and governance structures into the Policy Arrangement Approach conceptual framework, where they will be studied through the lens of the different dimensions of a policy arrangement. The MPA governance structures of current dominant and alternative MPA approaches are analysed through the lenses of the *Actor & Coalitions*, *Resources* and *Rules of the Game* dimensions. This can be justified, because together the dimensions increase understanding of the dynamics and interactions between state, market and civil society to achieve strategic objectives; thereby they provide insight in the organisational governance structures of Dutch MPA policy arrangements. The discourse component of the PAA conceptual framework is crucial for studying the substance of the Dutch MPA policy arrangements. Discourse analysis will provide stakeholder perspectives on the dominant- and potential of alternative approaches for MPA policies on the Dutch North Sea. The integration between the PAA, MPA Discourses and Governance Structures is shown in the adjusted conceptual framework in figure 5.



**Figure 5:** The PAA conceptual framework as will be used in this research for investigating the governance structures and discourses of MPA policy arrangements on the Dutch North Sea (Adjusted after van Tatenhove et al, 2000b).



## 4. Case Study: the Dutch North Sea



**Figure 6:** The North Sea; showing jurisdictional borders between coastal states (North Sea Atlas, no date).

The North Sea (see figure 6) is a relatively small and shallow sea on the eastern fringes of the Atlantic Ocean in the north-west of Europe. The funnel shaped sea covers an area of circa. 575.000 km<sup>2</sup>, with a varying depth of 30 to over 60 meter and shares borders with the coastal states of the Netherlands, Belgium, France, Germany, Denmark, Sweden and the United Kingdom. The Dutch part of the North Sea covers an area of circa 58.000 km<sup>2</sup>, equal to one tenth of the total surface (Dotinga and Trouwborst, 2009; Ministry EA and I&E, 2014).

At first sight, the North Sea gives the impression of a large, cold, lifeless, grey matter. However the opposite is true. The North Sea is often referred to as the last Dutch wilderness and the largest nature area of the Netherlands (Lindeboom et al., 2008). Because of its funnel shape, its varying depths but overall relatively high altitude compared to the Atlantic Ocean and sea entrances from both the land and the ocean, the right set of conditions are created for a large supply of nutrients (Lindeboom, 2015). Subsequently, the North Sea is one of the richest seas in the world, containing an enormous diversity of species and high productivity and is therefore regarded as an ecosystem of important ecological value (Ministry EA and I&E, 2014).

Besides from being one of the ecological richest, the North Sea is also one of the most crowded and intensive used seas in the world. Especially the Dutch part of the North sea is subject to an enormous amount of human economic activities. Being a relatively small sea, this results in a dense spatial use of the North Sea as is visualized in the figures of Annex I. Currently, human functions that claim the largest amount of space are shipping, oil- and gas extraction, surface mining (dredging and sand supplementation) and fishing. Other, less space consuming functions are the laying of cables and pipes, military- and recreational activities. Moreover, it is expected that this spatial pressure on the North Sea will increase further, due to an intensification of current activities and the development of new space consuming functions such as offshore aquaculture in the form of (shell)fish and seaweed farms, and renewable energy production in the form of wind and tidal energy (Abspoel and Vis, 2015) (Lindeboom et al., 2005).

All these North Sea users pursue different interests, but overlap each other geographically in needed space. This results in competing spatial claims of which a comprehensive overview is shown in table 2. Some usages are fixed in one place, such as gas- and oil extraction and offshore wind parks. Others are more























mobile within specific zones, such as shipping, military practice grounds or dredging activities. Traditionally, fishing is least bound to certain spatial areas, since it depends on more or less mobile (shell)fish species (Toonen, 2013).

When taking a closer look at table 2, the most conflicting space division is that between human activities and nature. This is of particular interest, since these human activities put the North Sea ecosystem under severe pressure and reduce its rich biodiversity and resilience. In the current situation, there is little left of the above mentioned wilderness in large areas of the Dutch North Sea. In the past, the North Sea was characterized by the presence of sharks, rays, large tuna and codfish. Extensive areas of the North Sea floor were covered with oyster banks, serving as a natural reef and attracting high levels of biodiversity. Today, these oyster banks are replaced by large barren sand plains. Sharks, rays and tuna have disappeared and codfish can only be found in very small sizes. A part of these changes in the North Sea can be attributed to natural variation in the ecosystem (see for instance Weijerman et al., 2005). But, the increased human activity on the North Sea is also an unquestionable cause for the decreased biodiversity (Lindeboom et al., 2008). Prominent research done by Lindeboom et al. (2005) within seven important ecological areas of the North Sea, shows the impact of current and future socio-economic use on several North Sea biodiversity values (See Annex II).

This report showed that of all the different activities, fishery has the largest impact on the biodiversity values of the North Sea. In this category, the beam trawl fishery is most harmful, due to the dragging of iron

Source: Integraal beheerplan Noordzee, 2015: 20

	 Natuur	 Scheepvaart	 Olie- en gaswinning	 Visserij	 Oppervlaktedelfstoffenwinning	 Baggerspecie	 Windenergie	 Kabels en leidingen	 Recreatie	 Militair gebruik
 Natuur		X	X	X	X	X	X	X	X	X
 Scheepvaart	X		X	X			X	X	X	X
 Olie- en gaswinning	X	X		X			X	X		X
 Visserij	X	X	X				X	X		X
 Oppervlaktedelfstoffenwinning	X							X		X
 Baggerspecie	X									
 Windenergie	X	X	X	X				X	X	X
 Kabels en leidingen	X	X	X	X	X		X			X
 Recreatie	X	X					X			X
 Militair gebruik	X	X	X	X	X		X	X	X	

chains across the North Sea floor. Next, is the polluting effect of shipping. The effects military activities and oil-, gas- and surface mining is relatively low due to their small and local occurrence (Lindeboom et al., 2008).

In order to sustain the rich biodiversity of the North Sea, the Dutch government has set it as an important challenge to create a more balanced relationship between nature conservation and economic use (Ministry EA and I&E, 2014).

Table 2: Conflicting spatial claims on the Dutch North Sea (Noordzeeloket, 2011)

## 5. Current status Natura 2000 North Sea MPAs

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### 5.1 Natura 2000 – Implementation context

*“A MPA is an umbrella term for nature conservation at sea: it can mean different things and have different shapes”* (Interview 7, 2015).

When discussing marine reserves in the Dutch North Sea, in legal terms they are referred to as ‘Natura 2000’ areas. Natura 2000 is the overarching legal and binding EU framework that aims to establish an ecological network of protected areas across Europe, to protect Europe’s most valuable and threatened species and habitats. Since it is legally binding, each Member State is obliged to implement Natura 2000 areas, which makes it the most important framework for the establishment of marine reserves within the maritime zones of the EU (Olsen, 2013).

Initially, Natura 2000 was focused on establishing an ecological network of terrestrial areas. However under pressure of international agreements made during the Convention on Biological Diversity (2004) and World Summit on Sustainable Development (2002), the EU as a contracting party, agreed on the following statement: *“the establishment and maintenance by 2010 for terrestrial and by 2012 for marine areas (later postponed to 2020) of comprehensive, effectively managed, and ecologically representative national and regional systems of protected areas that collectively add to a global network of protected areas (...) to reduce the current rate of biodiversity loss”* (CBD, 2010).

Thereby, the EU extended the scope of Natura 2000 to all maritime areas under jurisdiction of EU and Member States were forced to assign Natura 2000 areas for the offshore marine environment by 2008. To comply with legislation, the Dutch government implemented this EU framework within the Dutch Nature Conservation Act of 1998, which made it legally possible to assign areas within their territory. Actual implementation of these nature reserves is arranged by two EU instruments:

#### **The Birds Directive (EU Council Directive 79/409/EEC).**

This Directive ensures conservation at the level of individual species. Member States are obliged to establish Special Protection Areas (SPA) for bird and migratory species, when these species occur regularly in an area within their jurisdiction. Since 1994 all SPAs are integrated in the Natura 2000 ecological network (European Commission, 2016). In the marine environment, Bird Directive sites are selected based on the following criteria:

- Protection of threatened and vulnerable population of bird species referred to in Annex I of the Birds Directive (European Commission, 1979). With regard to the Dutch North Sea, the following bird species listed in Annex 1 are subject to conservation measures: pearl diver; red-throated diver; loon; diver crest; storm petrels; storm petrels pale; pale shearwater; little gull; sandwich tern; common tern; arctic tern; little tern and black tern (Lindeboom et al., 2005).
- Regular occurrence of migratory bird species: areas are designated if frequent recurrence of migrating bird species takes place, when at least 1% of the individuals of a geographical bird population is present (Lindeboom et al., 2005).

### **the Habitat Directive (EU Council Directive 92/43/EEC).**

This Directive ensures conservation of natural habitat types and species. The Directive aims to protect over 200 habitat types and more than 1000 flora and fauna species of European importance. Based on these listed habitats and species Member States are required to implement Special Areas of Conservation (SACs) (European Commission, 2016). Within the marine environment, Habitat Directive sites are selected based on the following criteria:

- a. Habitat types listed in Annex I of the Habitat Directive (Commission, 1992). With respect to the Dutch North Sea, the following offshore marine habitat areas are most relevant: sandbanks continuously covered by sea water (Habitat type 11.10), reefs (Habitat type 11.70) and permanently submerged structures formed by leaking gases (Habitat type 11.80) (Lindeboom et al., 2005; Interview 1, 2015).
- b. Frequent occurrence of Marine species listed in Annex II of the Habitat Directive (European Commission, 1992). With respect to the Dutch North Sea, relevant species are: marine mammals (gray and common seal, bottlenose dolphin and porpoise) and fishes (river and sea lamprey, shad, fin and sturgeon) (Lindeboom et al., 2005).

## **5.2 Natura 2000 – Route to implementation**

Implementation of a fully operational Natura 2000 protected area on the Dutch North Sea is a complex and multi-phase policy process. The process consists of four procedural stages, in which responsibilities are spread over different political bodies (Interview 1, 7, 11, 2015). For the implementation of a Habitat Directive area all four stages must be conducted. The process of a Bird Directive area is less extensive as they are directly designated by Dutch law and do not require the first two stages of EU registration and approval. The remaining stages – designation and management – proceed similar to a Habitat Directive site.

- 1. Registration.** To start the designation procedure, Habitat Directive sites need to be registered at the European Commission (EC). The initiative to select the Habitat sites lies at the level of the Member State: *“each Member State has decision power to determine which areas they want to qualify. However, this qualification should be based on habitat types listed in Annex 1 and/or species types listed in Annex II of the Habitat Directive”* (Interview 1, 2015). In the Netherlands, registration authority lies with the Ministry of Economic Affairs (EA) in collaboration with the Ministry of Infrastructure and Environment (I&E). Spatial selection of the sites is based on independent scientific research, commissioned by one of the two ministries (Interview 1, 2, 2015).
- 2. Approval.** Based on assessment criteria in Annex III of the Habitat Directive, the European Commission will assess the proposed list on the relative importance of the Habitat site and species (European Commission, 1992). This is measured based on a biogeographic seminar, which examines if the proposed sites are of sufficient ecological value and size. Depending on the outcome, the European Commission has the authority to give approval and will place the proposed sites on the national list as ‘Sites of Community importance’. Sometimes the Member State will be imposed with additional research on a certain area or topic (Interview 7, 2015). Once on the list of Community

importance, the sites need to be designated as SACs as soon as possible, within a term of six years at most (European Commission, 1992). In 2009, the list of Dutch North Sea sites was approved and officially published as sites of Community importance (Dijkma, 2013).

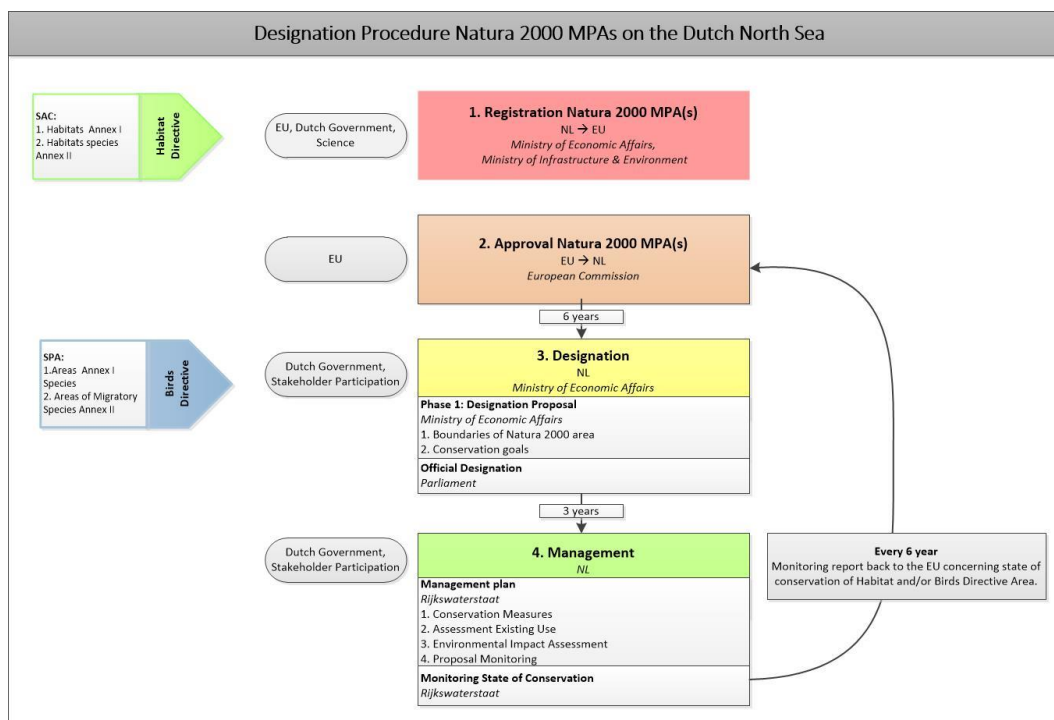
2. **Designation.** From the designation process onwards, the responsibility lies at the level of the Nation State. The Dutch ministry of Economic Affairs has the responsibility to design a profile for the Bird and Habitat areas, in which the area's boundaries and conservation goals are described. These profiles indicate the designation in design and are submitted to the I<sup>st</sup> and II<sup>nd</sup> Chamber by the State Secretary: *"this displays the minister's intention to officially designate the areas and gives the start signal for a four week resolution procedure in which the profiles are judged by both Chambers"* (Interview 1, 2015). When a majority in the Chambers is achieved, the sites are officially designated as Natura 2000 areas under the Dutch Nature Conservation Act and the Dutch government gives a legal promise to:
  - a. maintain or restore the Habitat and/or Bird site at a favourable conservation status, to pay attention to the coherence of the Natura 2000 network and to regulate threats of degradation or destruction to which the sites are exposed (European Commission, 1992).
  - b. to take the necessary conservation measures to maintain the concerning bird population to ensure their survival and reproduction at a level corresponding with ecological, scientific and cultural requirements (European Commission, 1979).
3. **Management.** After designation, three years are given to develop and implement a management plan for the Habitat or Birds Directive site. The management plan is a mandatory instrument and is developed by Rijkswaterstaat: the Directorate General for Public Works and Water Management under the Ministry of Infrastructure and Environment. They describe a detailed plan of measures necessary to maintain and improve the ecological status of the protected areas, often characterised by access and usage restrictions of the area. In order to keep management updated with other policy developments, Rijkswaterstaat is required to renew the management plans once every six years, as well as providing monitoring reports concerning the sites conservation status to the EU once every six years (Interview 1, 2015).

To recap, the process for establishing a Bird- or Habitat Directive site is steered by strict rules and legislative procedures defined by the European Union, that are imposed on the Member States. This establishment procedure for protected areas on the Dutch North Sea is visualized in figure 7 below. Area selection is based on scientifically established criteria and proceeds by assessing the characteristics of a site to protection goals listed within the Annexes of the Directives. Member States are obliged to select areas on their continental shelf and to finish the implementation procedure within six years, otherwise an EU fee will follow. Implementation obligation and authority lies with governmental bodies of which the most important are: the European Commission; Ministry of Economic Affairs (EA), Ministry of Infrastructure and Environment (I&E) and Rijkswaterstaat.

Also visible in figure 7, and confirmed by stakeholder interviews, is the extensive space for stakeholders to exert influence during the implementation process of Natura 2000 MPAs. These stakeholder consultation and participation are legally embedded procedures and are discussed in more detail in chapter 6.

Although the Dutch government is obliged to designate and manage protected areas, they are left relatively free in setting the conservation goals and installing management measures – as long as they apply within the jurisdictional borders of Natura 2000 (Dotinga and Trouwborst, 2009). Therefore, stakeholder involvement during the management phase in particular, can be crucial for setting the conservation terms. Taking into account the many users of the North Sea, often characterized by conflicting interests, it can be a challenging and time consuming task to reach stakeholder agreement (interview 1, 7, 11, 2015). Therefore it is expected that it is in this phase – between designation and management – where paper park policies often occur: the areas are formally designated, drawn into maps and incorporated in policy reports, but actual protection often follows multiple years later, when agreement is achieved about the management plans.

The next sub-chapter will go into detail about the current status of Dutch Natura 2000 MPAs and investigates their paper park status.



### 5.3 Current Status and characteristics Natura 2000 sites Dutch North Sea

“Understanding the current protection status of Natura 2000 areas on the Dutch part of the North Sea is a complex puzzle” (Interview 1, 2015). At the heart of this complexity is the issue of sovereignty. As the marine environment can be considered a common pool resource, there are no natural property rights or borders at sea (Toonen, 2013). This imposes a twofold complexity.

In geographical terms, the lack of physical borders enables free access to marine resources, but also unrestricted movement of human activities and marine species. To control this borderless environment, marine activities are governed by the UNCLOS agreement; an international convention where it was agreed to organize the marine environment in different jurisdictional zones, divided in the Territorial Sea (12 nautical mile sea inwards), the Exclusive Economic Zone (EEZ)(200 nautical mile sea inwards) and the High Seas (beyond 200 nautical mile sea inwards). By creating these artificial borders, coastal states acquire a form of legal control over their adjacent marine areas. For Dutch North Sea MPAs, only two jurisdictional zones are relevant: the Territorial Sea – or Coastal Zone, and the Exclusive Economic Zone (Toonen, 2013). These zones are subject to different rules and authorities, leading to a second complexity: that of procedural complexity. Managing a common like the North Sea is not necessarily bound to one of the bordering nation states. Instead, it is a task of different authorities operating at multiple governance levels. Consequently, marine management of the North Sea is characterized by a highly fragmented European governance system, expressed through a complex maze of binding or voluntary rules, laws and agreements implemented at different levels (see for instance (Dotinga and Trouwborst, 2009))(Raakjaer et al., 2014).

Gaining a holistic understanding of current North Sea Natura 2000 MPAs within this maze of jurisdictional complexity can therefore be a challenging task. Nevertheless, a global and chronical description of the current status of Dutch Natura 2000 MPAs is provided below, in which a division is made between areas in the Dutch Coastal and EEZ zone. It should be noted, that at the time of writing, several procedures in relation to these Natura 2000 sites are ongoing. An overview of the latest developments is provided, but at the time of publishing this report, changes may have occurred.

#### **Natura 2000 sites - Coastal Zone**

The Dutch Coastal Zone covers three Natura 2000 sites: The *Voordelta*, *Vlakte van de Raan* and *Coastal Sea*. Because they are located in the territorial sea, implementation authority is subject of the Dutch government. Collectively, the *Vlakte van de Raan* and *The Coastal Sea* are often referred to as the *Coastal Sea*, since they stretch along the entire Dutch coastline. A small gap is located at the Maasvlakte, which marks the entry of the Rotterdam Harbour: an area of high economic value for the Netherlands (Dotinga and Trouwborst, 2009).

1. **Voordelta.** The first Dutch marine Natura 2000 reserve is located on the coast of the province South-Holland and the Zeeuwse Delta (see figure 8). In 2003/2004 the area was registered and placed on the EU list of Community Importance. In 2008 the Dutch government designated the area as a Birds and Habitat Directive site (Habitat type 11.10 Sandbank). The area comprises a region of 92.367 ha. and is characterised by a dynamic environment and high productivity (Ministry of EA, 2008). The designation



process proceeded progressively and in 2008 the first management plan went into force. Currently, a second management plan in design is ready and is waiting for official publication. The *Voordelta* is the only North Sea MPA example, where the implementation process proceeded progressively: *“Reason of this progressive realization of the Voordelta, was an economic stimulus: the Rotterdam Harbour was obliged to deliver nature compensation for the development of the second Maasvlakte and would therefore benefit with rapid performance”* (Interview 1, 2015).

2. **Vlakte van de Raan.** This area is located South of the Voordelta, between the Belgian and Zeeuwse Coast (see figure 8). In 2009 the area was approved by the European Commission and placed on the list of Community Importance. In 2011 the Dutch government designated the area as a Habitat Directive and comprises a region of 17.521 ha. It is listed as Habitat type 11.10 Sandbank constantly covered by seawater under Annex I and should protect several present species listed under Annex II of the Directive (Ministry of EA, 2011). Although delayed, currently the management plan in design is ready and it is expected that the final management plan will be published early 2016 (Interview 1, 2015).

#### Box I – VIBEG Agreement

The VIBEG (Fishery Measures in Protected Areas) agreement was the result of a multi-stakeholder process starting in 2008 of which the aim was to collaborate in the development of fishery measures within the Natura 2000 areas *Vlakte van de Raan* and *North Sea Coastal Zone*. Together with representatives from the Dutch government (Ministry of Economic Affairs; Infrastructure and Environment; Rijkswaterstaat), science (IMARES), environmental NGOs (WWF, NSF, Wadden Association and Natuurmonumenten) and the fishery sector (Productschap vis, VisNed, Dutch Fishery Association), chaired by an external party in the person of Jan Heijkoop, the parties came to an agreement in 2011 (Heijkoop, 2011). The result was a zoning proposal with five different classes, ranging from completely closed, to completely open and areas for research (Interview 1, 2015). However under pressure of the coastal shrimp fishery the agreement was re-opened again: the economic consequences of the measures would be too severe. In December 2015 the parties reached an agreement on the main points, but the process is still ongoing (Jak et al., 2009; Nederlandse Vissersbond, 2015).

#### 3. North Sea Coastal Sea.

In 2009 the entire Dutch Coastline except the Maasvlakte was EU registered and in 2009/2010 designated as Birds and Habitat Directive site (Habitat type 11.10 Sandbank). It borders from the large delta areas in the South to the areas bordering on the Wadden Sea in the North and is 123.134 ha (see figure 8). The Dutch Coastline is

characterised by a rich and productive ecological system of bottom-dwelling organisms and a diversity of bird and fish species and sea mammals (Ministry of EA, 2009; Dotinga and Trouwborst, 2009). Developing a management plan has been a challenging task and passed the three years developing deadline. Currently the management plan in design is ready and a formal consultation period started in January 2016. Provided that agreed, the management plan will be published after six weeks of consultation. Measures within the plan are mainly focused on fishery activities. Reaching agreement has been such a challenge, because conflicting interests and intensive multi-stakeholder dialogues

dominated the negotiation process. The process became known as the VIBEG agreement (see Box I)(Interview 1, 2015).

### **Natura 2000 sites –Exclusive Economic Zone**

In the Dutch Exclusive Economic Zone the following three sites are registered as Natura 2000 reserve: the *Dogger Bank*, the *Cleaver Bank* and the *Frisian Front*. They are placed on the EU list of Community Importance since 2009, but are still on the Dutch agenda for official designation and implementation of management plans. This results in a situation where they are drawn into maps and incorporated in policy reports, but actual conservation is still absent (ICES, 2011).

Although multiple governmental respondents recognize the long-term delays, they also indicate that much effort has been made to ‘get things moving’ (Interview 1, 7, 11, 2015). Delays were inevitable due to jurisdictional complexities for managing the EEZ. To designate and manage areas on the EEZ, a legal basis is necessary. But the tool providing this authority - the Dutch Nature Act, was only legitimate in the Coastal Zone until recently. Therefore, to implement a fully operational protected area within the EEZ, the legal application of the Nature Act had to be extended to the EEZ (Interview 1, 7, 11, 2015). This process started in 2010, but was not without fits and starts: political turmoil caused the process to take four years. among other (Interview 1, 2015):

- Twice, the Dutch government fell when the amendment was on the political agenda waiting for approval. This caused the amendment to be declared controversial and was postponed to the next government, including the decision to approve or disapprove.
- Fear from the current majority of government parties to limit the free market economy. Especially governmental parties VVD and CDA questioned what the juridical extension would mean for the free movements and economic activities (e.g. gas and oil industry, fishing) on the EEZ.

Ultimately on January 1, 2014 the Dutch Nature Act became also applicable on the Dutch EEZ, which enables the designation of EEZ Natura 2000 areas (Interview 1, 7, 11, 2015). In the same year, the State Secretary of the Ministry of Economic Affairs announced the intention to start designation procedure for the *Dogger Bank*, *Cleaver Bank* and *Frisian Front* (Staatscourant, 2014). The current status of these areas is still unclear. The State Secretary of Economic Affairs addressed the parliament (I<sup>st</sup> and II<sup>nd</sup> Chamber) on their obligation to designate: “If we do not adopt this law, we are in default with the Natura-2000 Directives” (Interview 7, 2015). However, next the Parliament enforced their power by claiming to stay indecisive on official designation prior to being informed about the proposed measures within the areas (Interview 7, 2015).

4. **Dogger Bank.** This area falls under Habitat type 11.10: Sandbank covered by water and is located in the Northern part of the Dutch Continental Shelf (DCS) (see figure 8), comprising a region of 473.477 ha. (Ministry of EA, n.d. a). The *Dogger Bank* is the only Dutch cross-bordering Natura 2000 area. The sandbank is located in the waters of the German, British and Danish EEZ, whereas only the Danish indicated they will not assign their portion as Natura 2000 MPA. Consequently, marine activities within



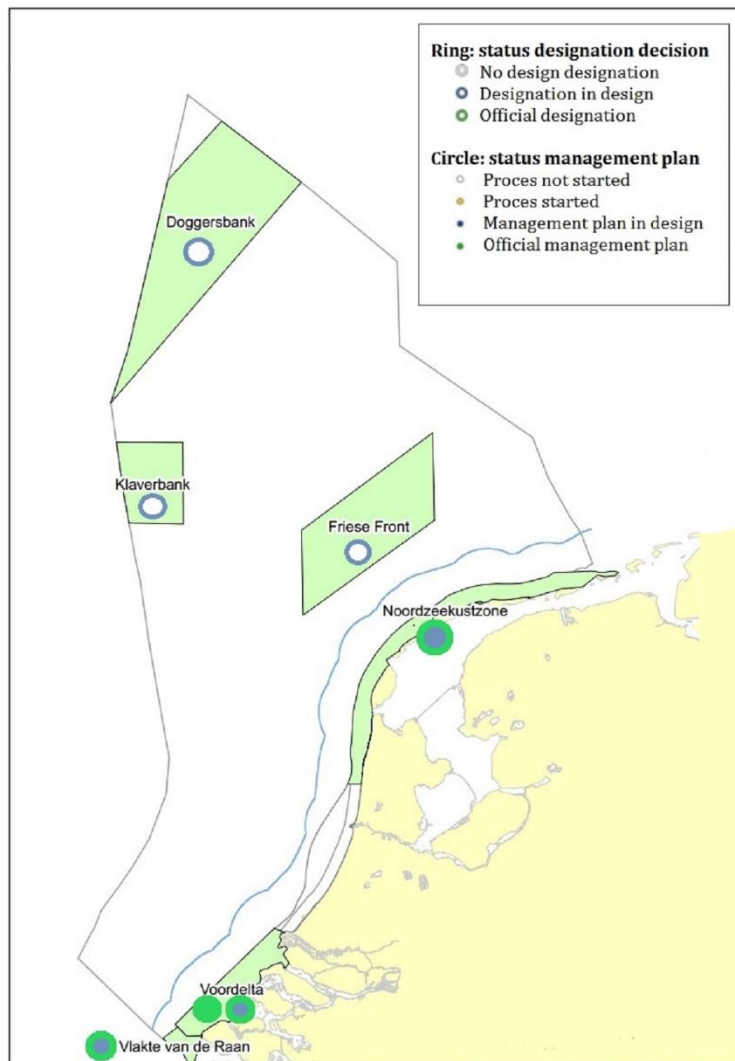
## Box II - FIMPA's-Project

The *Fishery Measures in Protected Areas* (FIMPA's) -project is an international multi-stakeholder consultation between the English, German and Dutch States that started in 2008. Aim is to collaborate in the development of fishery measures within Natura 2000 areas located in the EEZ of the North Sea - the *Dogger Bank*, the *Cleaver Bank* and the *Frisian Front*, and to come to a scientific sound, inter- and national accepted agreement (Interview 1, 7, 2015). To coordinate this complex process, the Netherlands invited the independent body ICES in the procedure. The negotiations involve governmental bodies, environmental NGOs, European fishery organisations and scientist. Based on a series of three workshops spread between 2010-2011 ICES' Advisory Committee advised the Dutch government on what fisheries measures could best be taken to protect the areas (Ijlstra, 2010). At the end of the process the fishery and environmental organisations could not get an agreement on the measures. An international commission of governments and scientists – the Dogger Bank steering group – made a protection proposition for the cross-bordering *Dogger Bank* in 2011. For the *Cleaver Bank*, the Dutch government ultimately presented a measurement package, which was mainly based on input and propositions from the fishery sector. When these management plans in design would be enacted, 3,7% of the Dutch North Sea would be closed for trawl fishing. Germany and the UK already gave approval for the plans in 2013. However, the Dutch government rejected the proposed management plans at the end of 2014. Currently, it is still unclear when measurements for the areas will be approved (Interview 6, 2015).

this shared ecosystem will be subject to different national legislation. Due to this cross-border complexities, the Netherlands asked the *International Council for the Exploration of the Sea* (ICES) to coordinate the procedure. Led by ICES, from 2009 until 2013 the German, English and Dutch governments worked together in organizing an international, science-based and stakeholder driven process to develop a package of measures – emphasizing fishery measures – for the entire *Dogger Bank* (Ijlstra, 2010) (Interview 1, 2015). The process became part of the

FIMPAs-project and is too extensive to go into detail here (but can be found in the FIMPAs report (ICES, 2011) and a general understanding of the FIMPAs-project is described in Box II). For the Dutch section of the *Dogger Bank*, a similar zoning proposal as with the VIBEG agreement was achieved between the stakeholders, in which  $\frac{1}{3}$  of the area will be closed for seabed disturbing fishing activities (Interview 6, 2015). The current protection status of the *Dogger Bank* is still unclear. It is expected that Dutch designation will proceed soon: the plans and proposed measurements are ready and has been submitted to the Parliament. Designation now depends on their judgement (Interview 6, 2015).

5. **Cleaver Bank.** This area falls under Habitat type 11.70: Reefs on open sea. It is located in the North West of the DCS (see figure 8) and comprises a region of 153.868 ha. (Ministry of EA, n.d. a). It crosses borders on the UK continental shelf, but is not registered as protected area on the English side (Lindeboom et al., 2005). The *Cleaver Bank* is characterized by a seabed of mostly large rocks and gravel. This hard substrate is an important ecosystem feature for marine fauna species to settle, resulting in the highest seabed diversity in the DCS, which subsequently attracts high levels of other biodiversity. Therefore, protecting these bottom structures is important and measurements in the area are focused on limited bottom disturbing activities, of which trawl fishing is most harmful. Under the FIMPAs project a zoning proposal is suggested based on varying degrees of fishing measurements. But



**Figure 8:** Current status and location North Sea Natura 2000 MPAs (Based on Noordzeeloket, n.d. a)

so far, the area has not been designated or managed (Dijksma, 2014). The *Cleaver Bank* is a clear example of being criticized over its paper park management. In 2015, slow decision making procedures and long term-absence of conservation measures was reason for the campaigning action of Greenpeace to throw rocks in the area. Besides from generating public attention for the slow and inactive government procedures, the action was also mend to take the matter into their own hands by creating a physical barrier against trawl fishing (Interview 13, 2015): “*The Dutch government is just loitering, it is time to get things moving, no more paper parks but actual protection*” (Aarsen, 2015).

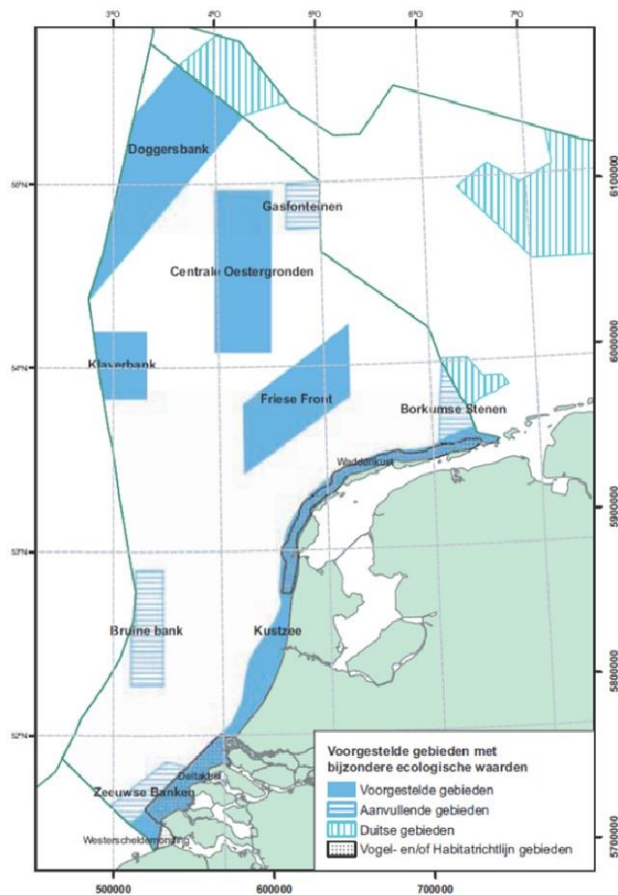
- 6. Frisian Front.** Currently, this area is the only Birds Directive area in the DCS. It can be designated directly by the Dutch government and does not require the approval of the EC. The site is located north of the Wadden Islands (see figure 8) and comprises a region of 288.000 ha. The site forms a transition zone between the shallow southern and deeper central part of the North Sea. These dynamics cause a front characterized by high biodiversity productivity. The seabed is not quantifiable under the Habitats Directive, but the high biodiversity makes it an important feeding area for seabirds and is therefore waiting to be designated as Birds Directive area {Ministry of EA, n.d. a}. Currently, negotiations are held for a proposal of measurements. These are focused on gillnet fishery measures and intends to reduce the risk of bycatch in these fishery nets (Dijksma, 2014). But so far, again the area is not officially designated or managed.

## Other areas of ecological value

Besides these Natura 2000 areas, there are six more areas of ecological interest in the Dutch North Sea. However, scientific data on these areas is still deficient to determine whether they meet Natura 2000 qualification criteria (Dotinga and Trouwborst, 2009). These areas are:

1. **Borkumse Stones.** This area borders the Coastal Sea near the Wadden island Schiermonnikoog and crosses the border with Germany (Dotinga and Trouwborst, 2009) (see figure 9). The seabed structure is similar to that of the *Cleaver Bank*; a reef of large rocks and gravel cover the seabed (Interview 3, 2015). Although the area qualifies under the Habitat Directive, the Dutch government has no intention yet to designate the area as protected. Currently, the surface of the *Cleaver Bank* covers Dutch surface obligations for reef protection (Interview 1, 7, 2015). However, limited research done in the area, has yielded exceptional results. This is summarized by the following blog fragments of I. IMARES marine biologist O. Bos and WWF respondent E. Reuchlin-Hugenholtz, in which they describe their experience during 'Expedition Borkumse Stones 2015'; a North Sea expedition organized by 'Dive the North Sea clean Foundation' in June 2015:
  - I. *"The area is exclusive and unique. Commissioned by the ministry of Economic Affairs, our team was given the task to identify the ecological values of the area. After hours of sand on the monitor, an oasis of biodiversity became visual on the screen. We were euphoric: stones covered with anemones, starfish, dragonets, a complete ecosystem unfolded. At the time, we found almost 200 different species in the area. Quite a different view compared to the desert like sand plains most of the North Sea is covered with."* (Bos, 2015).
  - II. *"There is gravel and large boulders - shaping reef-like structures and serve as a natural grip for a diversity of animals and plants. We see dead man's finger coral, sponges, colourful anemones, young crab and flatfish, squids eggs, harness males, even flat oysters and the list goes on. What a life! Probably a lot more biodiversity can be discovered in the area. Because of the different types of habitats in one area, the unique species they shelter and the presence of reef structures, the Borkumse Stones form an important chain in the network of protected areas. Why is it not protected yet?"* (Reuchlin-Hugenholtz, 2015)
2. **Zeeuwse Banks .** This area is adjacent to the *Vlakte van de Raan* and borders the Belgium coastal sea (see figure 9). The shipping and fishing intensity in the area is high (Lindeboom et al., 2005 #44). Expected was that the area could be qualified as Habitat type 11.10: sandbanks covered by water. However, recent research has indicated that the area did not meet the qualification criteria to be registered and therefore will not be listed as a Natura 2000 protected area (Ministry of EA and Ministry of I&E, 2014).

3. **Central Oyster Grounds.** This silty area is located in the centre of the Dutch North Sea, above the *Frisian Front* (see figure 9). The flat oyster grounds of the past only survive by name. But nevertheless the area is characterized by a high diversity of zoobenthos and seabirds (Dotinga and Trouwborst, 2009). Most pressure on the ecosystem is the result of fishing activities in the area. Under Natura 2000 legislation the area will not be designated as a MPA, since its characteristics do not meet the qualification criteria of the Birds and Habitat Directive (Lindeboom et al., 2005 #44).
4. **Brown Bank.** This area is located in the South-West of the Dutch EEZ (see figure 9). The ecological value of the area is a high occurrence of bird species - particularly during winter time, and the frequent occurrence of porpoises. Whether this occurrence is structural and meets the requirements of the Birds and Habitat Directive remains to be researched (Lindeboom, et al., 2005 #44).



**Figure 9:** Natura 2000 areas in Coastal Zone and EEZ of the DCS together with other areas of ecological value (Lindeboom et al., 2005: 66).

5. **Gas Seeps.** This area is located in the North-East of the Dutch North Sea (see figure 9). As the name indicates, it contains a high concentration of fountains from which gas escapes (Lindeboom et al., 2005). As stated in the 'Policy Note North Sea 2016-2021', recent research has indicated that the area does not meet the qualification criteria to be registered as a Habitat Directive area and therefore will not be listed as a Natura 2000 protected area {Ministry of EA and Ministry of I&E, 2014 #83}.

6. **Arctica Area.** The Arctica Area is a relatively recent discovered site in the Dutch North Sea. It is located next to the upper left of the Central Oyster Grounds. The North Sea floor is little disturbed and thrives a rich and varied shellfish community (*Arctica Islandica*) (Dotinga and Trouwborst, 2009).

The table below gives a recap of the current status of the six North Sea Natura 2000 MPAs that are placed on the EU list of Community Importance. Interesting about the table is that it summarizes the paper park issue very sharp. As a ratifying country of the CBD in 2004, the Netherlands should protect 10% of their coastal and marine zones with MPAs by 2020 (CBD, 2010). At first the table indicates that the Dutch government has met the target already: total surface of the Dutch Continental Shelf divided by the surface of the protected areas, results in a protected surface of 20%. However, this percentage is based on EU registration and approval and thereby just confirms a conservation intention. What is even more interesting about the table, is that it confirms the expectation that the exact bottleneck of paper park management occurs at the national level, between designation and management. Here, a much lower percentage of 4.1 protection applies for the former and only 1.6% for the latter: far below the 10% target.

Natura 2000 Area	Natura 2000 type	Protected surface	Status			
			European Commission		Dutch Government	
			1.Registered	2.Approved	3.Designated	4.Managed
Voordelta	Birds and Habitats Directive	92.367 ha.	Yes 2003	Yes 2004	Yes 2008	Yes 2008
Vlakte van de Raan	Habitat Directive	17.521 ha.	Yes 2008	Yes 2009	Yes 2011	No In design
Coastal Zone	Birds and Habitats Directive	123.134 ha.	Yes 2008	Yes 2009	Yes 2009/2010	No in design
Dogger Bank	Habitat Directive	473.477 ha.	Yes 2008	Yes 2009	No In design	No In design
Cleaver Bank	Bird Directive	153.868 ha.	Yes 2008	Yes 2009	No	No
Frisian Front	Habitat Directive	288.000 ha.	N/A	N/A	No	No
	Ha. Protected	1.148.367 ha.	1.148.367 ha.	1.148.367 ha.	233.022 ha.	92.367 ha.
	Ha. Dutch Continental Shelf	5.700.000 ha				
	% Protected	20%	20%	20%	4.1%	1.6%

**Table 3:** current status North Sea Natura 2000 MPAs, including representation of their paper park policies (Ministry of EA, 2008; Ministry of EA, n.d.a; Ministry of EA, n.d.b.)

With this conclusion, it becomes interesting to investigate these phases in more detail; to detect and understand the factors that are restricting the Dutch North Sea MPAs to move beyond approval and paper conservation. To do so, it is important to see how Natura 2000 MPA policies are institutionalized in the Dutch socio-political context. Therefore in the next chapter, empirical findings will be analysed in a structured way by applying the PAA on the social-political context of the Dutch marine Natura 2000 policy arrangement.

## 6. Policy Arrangement of the Natura 2000 North Sea MPAs

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This empirical chapter investigates the paper park policies of Natura 2000 North Sea MPAs in more detail by applying the PAA conceptual framework on the findings. Governance structures and discourses are the leading concepts for analysing the Natura 2000 MPA policy arrangement. The former is analysed by the PAA indicators '*rules of the game*', '*stakeholder actors and coalitions*' and '*stakeholder resources*', whereas the latter analyses the different *stakeholder perspectives* or narratives on North Sea MPA policies.

The first section investigates the overall *rules of the game* during the policy process of implementing Dutch Natura 2000 MPAs. Here, interactions between the main stakeholders are visualized and enlarges understanding of the different roles the stakeholders play within the MPA policy arena. Next, the *resources*, *discourses* and *coalitions* of each of the dominant *actors* within the policy arena are investigated in more detail. This generates a deeper understanding of the institutionalisation of the Dutch Natura 2000 MPA policy arrangement: it provides insight in the dominant structures and pitfalls of current paper park policies and paves the road for new insights and opportunities to improve these policies. In chapter 7 these new insights on the Natura 2000 MPA policy arrangement are used as handles to explore broader perspectives for Dutch MPA policy approaches, which could help steering away from current dominant paper park policies.

### 6.1 Rules of the Game

The rules of the game identify the roles and interactions of the main stakeholders within the policy arena of Natura 2000 MPA establishment on the Dutch North Sea. It describes the paths taken to come to full implementation of these MPAs. From stakeholder interviews it became clear that only a few stakeholders dominate the Natura 2000 MPA policy arena: the Dutch government, fishery sectors, environmental NGOs and scientific institutes (Interview 7, 2015). Their interactions can be divided in formal – fixed and authorised, and informal – flexible and unpredictable, rules of the game.

#### Formal Rules of the Game

The formal process of establishing Natura 2000 MPAs on the Dutch North Sea is largely described in chapter 5 and visualized in figure 7. It showed that the implementation process consists of four phases: registration, approval, designation and management. In most of these phases there is room for stakeholder participation, but the extent and format of this participation, depends on the stage of implementation: "*Most important phase for stakeholder influence is between designation and drafting the measures, because here most room is available to steer protection ambitions of the discussed area. This can proceed formal – by submitting views during the official consultation period and/or appeal against a decision, or informal – by lobbying or organizing stakeholder negotiations where the parties sit down the table with each other to discuss proposed plans.*" (Interview 6, 2015).

Until designation the governance rules are highly top-down steered. The European Commission controls implementation by imposing the legal framework and criteria of the Birds and Habitat Directive upon the Member States: "*from this framework of designation goals, the EU forces the Dutch government to identify and assign protected areas*" (Interview 1, 2015). This is a mandatory task of the Dutch ministry of Economic



Affairs in collaboration with the ministry of Infrastructure and Environment: *"If we fail to take responsibility for designation, we are in default with EU laws and regulation, which will result in complex EU procedures demanding a solid justification"* (Interview 11, 2015). Although demanding MPA designation, the European Commission leaves the Member States relatively free in the selection of these areas (Dotinga and Trouwborst, 2009)

At the national level areas are identified and proposed by the Dutch ministries with input from scientific organisations. Most important institutes at the national level are IMARES (Institute for Marine Resources and Ecosystem Services) and NIOZ (in Dutch: Nederlands Instituut voor Onderzoek der Zee), and ICES for the areas that cross borders. They conduct independent research for the identification of ecological valuable areas that meet the designation criteria for Natura 2000 MPAs (Dotinga and Trouwborst, 2009) (Interview 3, 2015). Leading in this regard was the scientific publication 'areas with special ecological values on the Dutch Continental Shelf' of Lindeboom et al. (Lindeboom et al., 2005). This report was the input for the EU registration of the Dutch Natura 2000 areas the *Dogger Bank*, *Cleaver Bank*, *Frisian Front* and *Coastal Zone* in 2007. In 2009 the European Commission approved this list of proposed areas: marking the start signal for the Dutch government to start procedures for official designation and management of the areas (Interview 4, 2015). Up to this point, hardly any stakeholders are involved in the implementation process, besides from the European Commission, Dutch government and relevant scientific institutes. Hence, the first three phases of Natura 2000 MPA designation on the Dutch North Sea, are driven by a formal and rigid process: fixed requirements, pre-determined goals, governmental authority and scientific input determine the rules of the game. These interactions are visualized in the first box of figure 10.

### **Informal Rules of the Game**

After formal designation of the areas the rules of the game change. Focus shifts from establishing a legal and scientific foundation for the North Sea Natura 2000 MPAs, towards the discussion of management measures within the areas. New stakeholders enter the policy arena and change the rules from being formal and rigid towards a game of negotiations and stakeholder power. This management phase is about finding social and political agreement on a detailed plan of protection measures. Without this agreement, the designated areas will remain paper parks. Therefore, the development of these management plans is crucial for the implementation success of the protected areas (Raakjaer et al., 2014).

Ironically, this final phase is most sensitive for procedural errors. Protection measures imply a limitation or prohibition of economic or social human activities in the protected area for the restoration of ecological values. Naturally, this is also the phase where most interests are at stake. Because fishery activities are proven to be most damaging for the North Sea ecosystem (Lindeboom et al., 2005), stakeholder negotiations concerning management measures usually unfold between the fishery sector and nature organisations (Interview 1, 2, 4, 7, 2015). Subject of discussion is whether the areas should be completely closed for human activities – the no-take or no-go MPAs, or should still allow a certain type or amount of human activities. At one side of the negotiation table, the fishery sector tries to limit the surface of closed areas as far as possible, as they fear to lose valuable parts of their fishing grounds (Interview 9, 10, 2015). At the other side, the nature organizations try to set the level of protection as high as possible, as they strive to

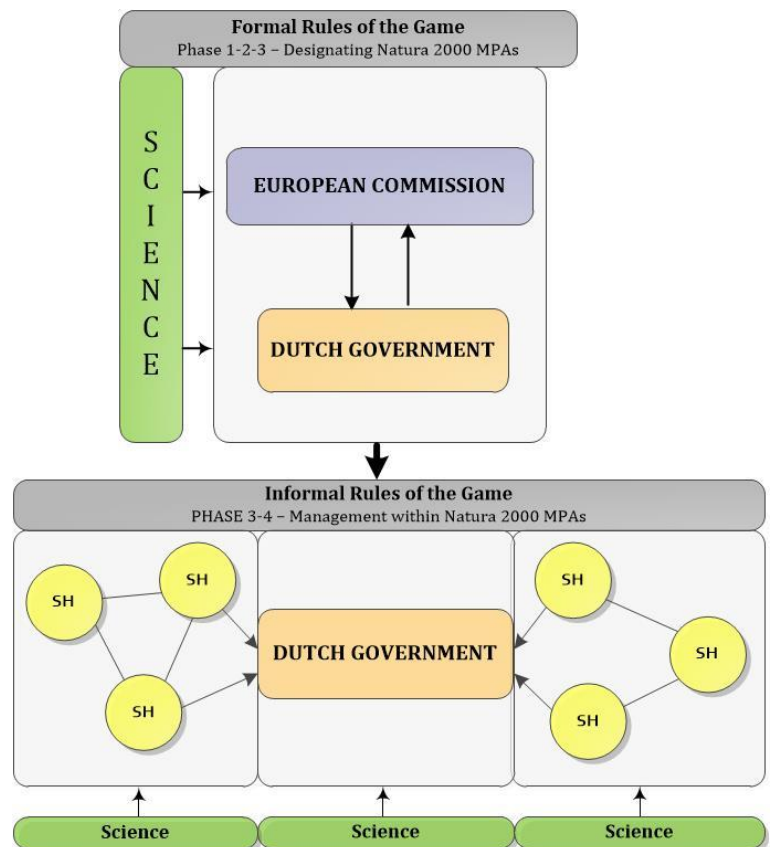


protect the already declining ecologically valuable areas of the North Sea (Interview 4, 6, 13, 16, 2015). To further complicate things, most room is provided for stakeholder participation during the negotiation of management measures. Whereas the former three phases of designation are characterized by little stakeholder participation, fixed procedures and authorizations, much more flexibility and stakeholder involvement is provided during the establishment of management plans (Interview 6, 2015).

The mixture of these two conditions: high and conflicting stakeholder interests and an increase in stakeholder participation, creates a breeding ground in which stakeholders are eager to bend and stretch the limits of protection as far as possible to safeguard their own interests. The result is a shift in governance: former nested governance structures change from being hierarchical and focused on the selection of protected areas, towards a complex socio-political game of power in which stakeholders determine the rules of the game and try to influence the protection ambition within the designated areas.

An important strategy used by all the players to bend and stretch the rules of this socio-political game of power, is subjective use of objective science. Up to MPA designation, science delivers the basic and objective data necessary to determine if an area fits Natura 2000 qualification criteria and can be protected (Interview 2, 2015). During the negotiation of management measures, use of scientific knowledge changes from being objective and transparent, into a political weapon: fundamental in determining the right of the strongest in the stakeholder arena of negotiating MPA protection borders and measures. Instead of being value free, the stakeholder strategically shop for statements that fit their claims, to fight each other with knowledge facts and gain political support for their position (Interview 11, 2015).

This division in formal and informal stakeholder influence is illustrated in figure 10. The first box shows that designation of Natura 2000 MPAs, including their initial idea and location, is discussed in isolation from society between governmental bodies and scientific institutes. Thereby designation is dominated by legal and scientific criteria on ecology only. Once formal obligations for area selection are complied, the governmental authorities 'open the gates' for North Sea stakeholders from the market and civil society to the second box in figure 10, to negotiate the operational protection measures within the area. The arrows from science towards the various stakeholders, represent the strategic use of scientific knowledge.



**Figure 10:** Flowchart of formal and informal rules of the game for implementing Natura 2000 MPAs on the Dutch North Sea.

This large procedural gap between formal designation and informal negotiating of management measures within Natura 2000 MPAs, has a major influence on the ultimate outcome and effectiveness of the MPA. Research into MPA failures and successes has indicated that the organization of the so called 'step zero' – the moment when the initial idea of a MPA is introduced, can already determine its success. MPAs can be established in many forms, with various objectives (see Annex III). To generate a common base, stakeholder participation should already start from step zero on. Here, stakeholders from political, scientific, social and economic backgrounds can establish a common objective, by finding agreement on key questions as *what are they for? Why are they needed? Where should they be located? and how should they operate?* (Chuenpagdee et al., 2013).

Within the current Dutch Natura 2000 MPA policy arrangement, determination of step zero occurs in isolation from society and stakeholders are not given the opportunity to create a common ground. They can only start expressing their opinion in the second box of figure 6.2; halfway through the implementation process. When the negotiation gates open, emotions about the initial measure have already run high and stakeholder conflicts and disagreements turn the MPA implementation process in a game of power: *"Ultimately, when it is about setting the operational protection measures for the area, and the entire process has taken already five to six years, it all comes down to an ordinary game of power: the right of the strongest is determined by the stakeholder with the strongest arguments and most political support"* (Interview 7, 2015).

The procedural gap between formal and informal rules of the game, furthermore seems to indicate that the government believes they have fulfilled international obligations when Natura 2000 MPAs are designated and thereby completed their task: they can loosen the reins of their authority and leave the negotiation of management measures to North Sea stakeholders. Governmental respondents indicated that they constantly negotiated the MPA design in collaboration with stakeholders from science, the fishery sector and environmental NGOs (Interview 1, 7, 11, 2015). However, other respondents claimed that at this point the government has lost its legitimacy as indisputable authority, due to lack of leadership and ambition (Interview 4, 6, 10, 16, 2015). This is expressed in vague negotiation rules and a lack of clear objectives, promoting a situation where the borders of stakeholder negotiation are unclear. Consequently, scope of negotiation goes beyond the discussion of management measures, towards changing designation criteria on the initial idea, shape, size and location of the MPA: i.e. stakeholders in box 2 of figure 6.1 try to influence agreements made in box 1 of figure 6.1. In doing so, stakeholders continue to deploy their resources until they have found a jurisdictional loop that will argue in their benefit (Interview 4, 2015).

These arguments illustrate that the current organisation of stakeholder interactions for implementing Natura 2000 MPAs, provides excessive room for negotiating and pushing conflicting interests, that can easily be drawn into delaying power struggles. It is for this reason that paper park policies are most visible at the phase of developing management measures.

This separation of formal and informal rules of the game within the current Natura 2000 MPA policy arrangement, exposes the sensitivity of the process for stakeholder dynamics. It emphasizes the importance of incorporating stakeholder perceptions from step zero on. It should be considered that *"MPAs are not just*

*a technical measure, but a socio-political enterprise*" (Chuenpagdee et al., 2013: 1). Therefore, implementing a Natura 2000 MPAs on the Dutch North Sea, can never occur in isolation from society. Its full design and planning process should always be a balancing act between ecological needs at one side, and socioeconomic and political interests at the other (Chuenpagdee et al., 2013; Toonen, 2013).

The next paragraphs will investigate the interactions of the main stakeholders within the Dutch Natura 2000 MPA policy arrangement in more detail. By subsequently analysing their coalitions, resources and discourses on current dominant Natura 2000 MPA policies, insight can be obtained on how they organize and influence the current policy arrangement. Both, the VIBEG and FIMPAs procedures give a clear indication of stakeholder interactions and power in the policy arrangement and will be used as examples.

## 6.2 Government

### *Coalitions, resources and discourses*

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The Dutch government fulfils different roles in organizing North Sea activities: *"we have the authority as a policy maker, responsible for designing and implementing policies, laws and rules. But, the government is also the manager and developer of management programs. Furthermore, the ministry of Economic Affairs is in charge for implementing nature areas as well as developing fishery policies on the North Sea. Therefore, we are not just a legal authority, but also one of the interested parties within the North Sea Natura 2000 debate"* (Interview 1, 2015). This discrepancy between authority, administrator and stakeholder can put the Dutch government in complex situations. On the one hand they have to act as an objective legal authority, safeguarding the boundaries of international MPA obligations. But on the other hand, the different governmental departments also have their personal agendas. This paragraph investigates the different governmental actors, their roles, interests, resources and perspectives on the North Sea Natura 2000 policies.

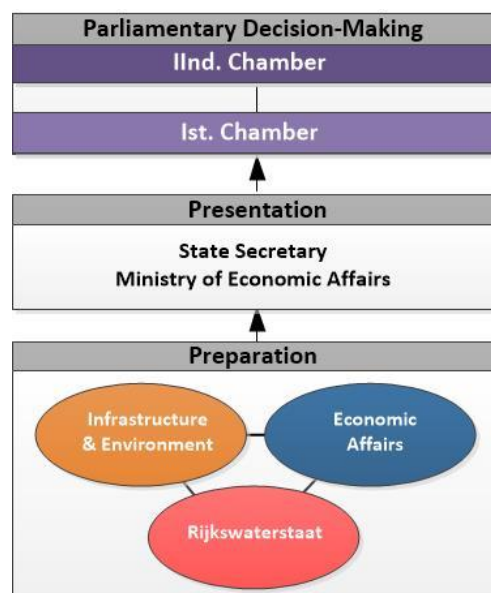
### 6.2.1 Governmental actors and Coalitions

#### **Actors**

The current Dutch Natura 2000 MPA policy domain is controlled by state actors operating at three different governmental levels (See figure 11). The first and lowest level is the preparation stage. At this executive level, policy plans for the North Sea Natura 2000 MPAs are prepared by the relevant Directorate Generals. Most important Directorate General is Rijkswaterstaat, and is responsible for the coordination of the MPA management plans. They closely collaborate with officials within the Ministries of Economic Affairs (EA) and Infrastructure and Environment (I&E) (Interview 1, 2015). Additionally, these ministries collaborate with external stakeholders for drafting the management plans. At the second level, the State Secretary of EA, presents the policy program as agreed by all the stakeholders to the Parliament. At the final and highest level, the Parliament performs its right as ultimate decision maker and the MPA policy program is approved or disapproved by ministers in the I<sup>st</sup> and II<sup>nd</sup> Chamber. When a majority of the Parliament is achieved, this results in a legal obligation to install management measures. Without this approval, the North Sea Natura 2000 MPAs will remain paper parks (Interview 1, 7, 11, 2015).

## Coalitions

From another perspective, stakeholder interviews made clear that the governmental actors collaborate in various coalitions. They can be separated into internal coalitions – consisting of only governmental actors, and external coalitions, consisting of both state and non-state actors.



**Figure 11:** Three governmental levels for implementing a legal Dutch Natura 2000 MPA.

The internal coalitions relate to the previous described formal rules of the game and are hierarchical organized (See figure 10 – first box). The governmental role is one of authority and implementer of legislation. At the highest level, EU institutions set broad principles and long-term objectives for the Member States; such as the obligation to achieve a good environmental status for European Seas or the implementation of a Natura 2000 network of terrestrial and marine protected areas. Furthermore, they regulate the exploitation of fish stocks in the European seas through the Common Fisheries Policy (CFP) (Raakjaer et al., 2014). At the national level, the Dutch government specifies these principles and objectives in legislation and policy programs. Regarding Natura 2000 MPAs, leading governmental actors are, the Ministry of EA – amongst other the responsible authority for Dutch nature and fishery

policies and the executive body for implementing Natura 2000 MPAs, and the Ministry of I&E, including Rijkswaterstaat – amongst other the responsible authority for the Dutch water bodies and environmental policies (Interview 1, 7, 11, 2015).

Although, each Ministry has their demarcated working area, a major overlap exists between the working areas of the Ministries in the execution of marine conservation policies. As indicated by several governmental respondents: *“this internal overlap can be difficult, especially since there is the tendency to slide tasks back and forth to each other as we believe that a certain subject fits better with the agenda of the other. Therefore internal communication and collaboration is key and we collaborate and consult on a daily basis. Usually we are able to come to an agreement, but not always we hold shared ideas on the boundaries of our work and then there is the risk of a file to remain in limbo unnecessarily long* (Interview 11, 2015).” In most cases, contact and collaboration between the departments happens on the corridors in an informal setting (Interview 11, 2015). However, larger North Sea agenda issues, are coordinated within the ‘Interdepartmental Directors North Sea Consultative Body’ (IDON, in Dutch: Interdepartementaal Overleg Noordzee). This is a coalition with representatives from all the Ministries with tasks and responsibilities on the North Sea<sup>1</sup>. Together, they coordinate the development of North Sea policies and prepare management

<sup>1</sup> These are the Ministries of- Economic Affairs; Infrastructure and Environment; Defence; Finance; Education, Culture and Science (In Dutch: OCW), and Directorate Generals Rijkswaterstaat and Coastguard (Noordzeeloket, No Date c)

decisions. Aim of IDON is that its coordinating character will support the Ministries in developing one shared vision, resulting in decisive North Sea policies and its sustainable use (Noordzeeloket, No Date c).

The external coalitions relate to the informal rules of the game and are characterized by an open process of negotiation. They operate at the previous described executive level and in these negotiations, governmental parties collaborate with the most important external partners (in most cases the environmental NGOs (eNGOs) and fishery sector) to find agreement on a program of measures for the protected area under discussion. Two dominant platforms for organising these discussions are the VIBEG –(for the coastal zone) and FIMPAs (for areas in the EEZ) projects. Central element of negotiation within these platforms is the development of fishery measures within the protected areas.

Within these platforms, separate stakeholder procedures are conducted for the negotiation of fishery measures in each of the designated Natura 2000 MPAs. An advantage of this sectoral approach is the development of customized management plans, able to deal effectively with site specific characteristics. However, these site specific stakeholder negotiations also entail the risk of supporting a narrowed vision for overall North Sea protection. Focus is the negotiation of fishery measures within the boundaries of each MPA, resulting in a loss of the wider protection context and vision. This has two consequences. First, in reality protection goals are always lower than is recommended by science to achieve effective recovery of the North Sea ecosystem. This is the result of conflicting stakeholder interests, that make compromises inevitable in order to reach an agreement. North Sea protection turns into a political game, where reaching stakeholder agreement becomes an end in itself, instead of serving the best needs of the ecosystem. Secondly, this sectoral approach in combination with political compromises results in a postmark approach for North Sea protection, in which small patches of biodiversity are protected and the overall connection with the North Sea ecosystem as a whole becomes lost (Interview 1, 3, 4, 10, 16, 2015). The governmental is in a balancing position within these external stakeholder coalitions. On the one hand, they act as neutral game keepers: they control the jurisdictional boundaries of Natura 2000 legislation, but furthermore let the stakeholders negotiate management proposals. On the other hand, their position is less objective, since they also need to make sure that the management proposal will be supported by the Parliament (Interview 11, 2015). This double governmental position entails stakeholder criticism and promotes the previous mentioned existence of vague negotiation borders.

### **6.2.2 Governmental Resources**

#### *Legislative and decision-making power*

To fulfil the EU obligation of implementing Natura 2000 MPAs on the Dutch North Sea, the governmental actors apply different resources. The first and most prominent resource is their legislative power. Simultaneously, this is the most unique and powerful tool within the Dutch Natura 2000 policy arrangement, since the entire arrangement leans upon the Natura 2000 legislative framework. This legislative power is exclusively assigned to the Dutch Parliament. They have the mandate to make MPA designation and management proposals legally binding. Outcome of this mandate depends on a parliamentary majority voting in favour of the MPA policy proposals. This implies a second unique governmental resource: the power of ultimate decision-making. Without a parliamentary approval for (1)

designation and (2) implementation of management measures, the Natura 2000 MPAs will remain paper parks. Hence, the Parliament is key actor in moving beyond current paper park policies (Interview 1, 6, 11, 2015).

From a nuanced perspective, the Parliament is not completely free in their decision to establish Natura 2000 MPAs on the Dutch North Sea. They need to ensure the Netherlands will meet international CBD commitments and EU Birds- and Habitat Directive obligations. However, these frameworks prescribe implementation obligations and do not specify protection ambitions within these areas. Therefore, the Parliament is still relatively free in their decision to approve management proposals or not. The approval of these management measures is extremely sensitive for the dominant political colour within the Parliament. They have the strategic power to reject presented management programs, until the proposal is adjusted to the level of ambition corresponding to the ruling political climate (Interview 1, 6, 7, 11, 16, 2015).

#### *Organization power*

At the executive governmental level, governmental officials as represented in the preparation stage of figure 7, have the power to organize stakeholder meetings and negotiation platforms. In these meetings stakeholders can defend their interests, bring in knowledge and deliver input for the design of the Natura 2000 MPAs. The VIBEG (see Box 1 p.39) and FIMPAs (see Box 2 p.41) procedures are leading platforms for organizing the stakeholder meetings for the Dutch Natura 2000 MPA areas that have been placed on the EU list of Community Importance. Both platforms represent delegates from the government, fishery sector, conservation organisations and science, to discuss fishery measures within the protected areas. VIBEG is the national procedure led by Jan Heijkoop for negotiating fishery measures in the areas of the Coastal Zone, whereas FIMPAs is the international procedure led by ICES for negotiating fishery measures in the areas of the EEZ. Important organisation strategy was the hiring of independent and neutral chairpersons to lead the stakeholder meetings, because governmental officials acted as one of the interested parties (Interview 1, 7, 11, 2015).

#### *Knowledge*

Final key resource of the government, is their use of scientific knowledge. Scientific experts are hired to research the ecological valuable characteristics of the North Sea. Leading scientific institute at the national level is IMARES and at the international level ICES conducts leading research for marine areas that cross jurisdictional borders (Interview 7, 2015). These institutes deliver the scientific foundation for constructing Natura 2000 MPA policies. Depending on the assignment they assess which North Sea areas are ecological valuable; test these areas against Natura 2000 qualification criteria; run impact assessments on the ecological effect of socioeconomic activities; determine the ecological and socioeconomic effect of proposed management measures; and monitor change within the ecosystem. Based on this scientific input, the government builds North Sea Natura 2000 policies and legislation. Thereby, together they are key partners in shaping the Natura 2000 policy arrangement (Interview 3, 4, 7, 2015).



### 6.2.3 Governmental Discourses

Multiple governmental discourses have been detected in relation to the current Natura 2000 MPA policies on the Dutch North Sea.

A first discourse is mainly present at the level of the Parliament and considers the motivation to establish Natura 2000 MPAs. This decision comes from a pragmatic and regulatory perspective, since the leading reason to establish these areas is imposed by Natura 2000 EU obligations: *“the Dutch Government is required to follow European regulations within the prescribed period of time, otherwise the EU will demand a justification for non-compliance, followed by a possible financial penalty”* (Interview 11, 2015). This governmental narrative is confirmed by the literature and indicated as an important reason for current MPA shortcomings in the Dutch North Sea: *“To a large degree, these MPA shortcomings are the result of the policy of the Dutch Government to go no further in the designation of MPAs than what is strictly required by the EU Birds and Habitat Directive”* (Dotinga and Trouwborst, 2009: 38).

A situation where this governmental narrative was visible, was during the decision procedure for designation of the *Borkumse Stones*. The reef structure of the area is similar to the *Cleaver Bank* and fulfils Natura 2000 qualification criteria for designation under the Habitat Directive. Ultimately, the Dutch Parliament decided not to designate the *Borkumse Stones*: the protected surface of the *Cleaver Bank* was already sufficient to meet EU Natura 2000 obligations for reef protection within the Dutch North Sea (Interview 1, 3, 7, 2015).

This minimalistic attitude is reinforced by the fact that the Ministry of EA is responsible for both Natura 2000 and fishery policies on the North Sea: *“the State Secretary of the Ministry of Economic Affairs is held responsible for realizing an economic healthy fishery sector, while also implementing Natura 2000 MPAs with the aim to reduce the harmful impact of fishery activities”* (interview 11, 2015). Traditionally, these two agendas tend to have a competing character. This results in a situation where prior to stakeholder negotiation, the route towards a compromise is already paved, in order to balance stakeholder interests (Interview 1, 2015). According to stakeholder respondents, the reality of this attempt to keep both parties satisfied, results in vague objectives, little ambition and weak compromises (Interview 6, 16, 2015).

A second and highly influential discourse is visible in the prioritisation of political interests. For at least the last decade, the Dutch government holds a perspective in which economic benefits are valued over nature conservation. In case of negotiating North Sea protection measures, this means that a flourishing fishery sector is considered more important than the conservation of marine habitats. This is amplified by the economic crisis and political climate of economic cuts: *“the current economic situation does not argue in favour of conservation measures. The fishery sector is already confronted with heavy economic losses and these kind of emotional arguments count heavily within politics. Nature has no emotion like that.”* (Interview 11, 2015). Overall, it is argued that currently the Dutch government does not run a very progressive nature policy: *“Nature on itself is not a subject that will result in a parliamentary majority”* (Interview 11, 2015). Besides from being a subject that has always been sensitive for the dominant political climate and ambition, in case of Natura 2000 nature also has to compete with a fishery sector that has deep cultural-traditional roots in the Dutch society. The rich historical and traditional character of a seafaring nation is part of the



national pride and is still present and reflected in the distribution of the parliament. From a traditional point of view, the fishery sector always had a political majority: more than 70% of the parliamentary members hold a strong pro-fishery position. This results in a situation where a relatively small sector can have a major political influence (Interview 4, 7, 11, 16, 2015).

A final and growing discourse at the executive level of preparing Natura 2000 MPA policies, is the realization that copying a land based policy instrument to the marine environment will not deliver the same results.

Initial aim of Natura 2000 was to connect terrestrial protected areas by ecological corridors to allow movement of species. With the similar thought Natura 2000 was extended to the marine environment. However, increasingly it becomes visible that marine ecosystem behaves completely different from terrestrial ecosystems: dynamics and distances are larger, and movement of species are not restrained by artificial man-made borders. Consequently, there is a growing recognition that Natura 2000 is an outdated policy tool, whose copy-paste ideology is not sufficient to efficiently protect the marine environment. Instead a regional North Sea vision is necessary, that is constructed on the integrated characteristics and dynamics of the sea (Interview 1, 11, 2015).

### 6.3 Environmental NGOs

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#### *Coalitions, resources and discourses*

##### **6.3.1 Environmental Actors and Coalitions**

The most important environmental non-governmental organisations (eNGOs) within the field of North Sea Natura 2000 MPAs are the World Wildlife Fund for nature (WWF), North Sea Foundation (NSF) and Greenpeace (Interview 6, 13, 16, 2015). Together, they form a 'green coalition', where they collaborate closely. With their supporters the green coalition represents a significant voice against the interests of the fishery sector (Interview 6, 2015). Aim of the eNGOs is to set high protection ambitions for the North Sea, against harmful human activities. The work of IMARES scientist Han Lindeboom is often used as a reference point by the eNGOs, in which he advocates the importance to fully close 25% of the North Sea for nature restoration (see (Lindeboom et al., 2005)(Interview 4, 2015). However, most of the organisations are eager to set higher targets and promote full closure of at least 30%. Additionally, this should be large and consistent areas. Achieving these targets is challenging: the large amount of North Sea spatial claims leaves little space for nature protection, and they are in direct conflict with fisheries interests (Interview 6, 13, 16, 2015).

##### **6.3.2 Environmental Resources**

The eNGOs use various resources to influence the level of protection measures within the designated MPAs. This influence they exert by using formal and informal routes<sup>2</sup>. Formally, the appeal against management decisions made by the Parliament. This always concerns changing a political decision after it has been made and is time and money consuming. Therefore, the eNGOs invest most of their resources in the process of

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<sup>2</sup> It should be noted that in general all the eNGOs use these resources in their activities. But slight differences exist: WWF and NSF are more active during lobby and negotiation activities, whereas Greenpeace is a prominent mobilization eNGO.

designing the measures, prior to decision-making. Here, more informal pathways are chosen (Interview 6, 2015).

#### *Legitimate spokesperson for nature*

A fundamental resource of the eNGOs, is their position as legitimate party at the stakeholder table to defend the ecological values of the North Sea. Being a public good, representation of nature's interests is not self-evident. Selected by their supporters, the eNGOs gained an institutionalized position as spokesman for nature. *"Together, WWF and the NSF already have eight million supporters. That is quite some weight to bring in during stakeholder negotiations with the government and fishery sector"* (Interview 6, 2015). The green sector expresses their legitimacy resource in various activities.

First and foremost, the eNGOs use this power to negotiate Natura 2000 MPA protection ambitions. Most of these stakeholder negotiations take place within a multi-stakeholder settings for which the VIBEG and FIMPAs platforms are dominant. Together with representatives from the Dutch government and fishery sector, the eNGOs negotiate the regulation of fishery activities within the Natura 2000 MPA under discussion, until they have come to an agreement they are satisfied with to present to the Parliament (Interview 6, 16, 2015). In case of the VIBEG agreement, these negotiations resulted in a zoning proposal for the North Sea Coastal zone: five zones are selected, allowing different degrees of fishing activities, ranging from completely closed to completely open (Heijkoop, 2011). Although, the dominant tool for the design of Natura 2000 MPA protection measures, the eNGOs regard the negotiation procedures as time consuming with minimal result: *"we discussed the measures for years, to end with a compromise no party is satisfied with"* (Interview 13, 2015). This inefficiency they do not blame as inherent to the multi-stakeholder procedures; these are regarded as critical procedures to guarantee effectiveness of the MPA measures (Interview 4, 12, 7, 2015). Instead, the eNGOs mention the increasingly hostile relation with the fishery sector as reason for inefficient negotiations. The parties enter negotiations with diametrically opposed goals: the eNGOs aim for the highest possible protection targets, whereas the fishermen oppose the entire idea of a protected area (Interview 6, 7, 10, 13, 16). This manifests in long and heated discussions between the two sectors, where the eNGOs accuses the fishery sector of no willingness to cooperate: *"They want nothing. They deliberately sabotage and delay decision making procedures. After years of negotiation, when we finally have come to a – for us - suboptimal agreement for which we made many concessions, they even refuse to comply with the compromise"* (Interview 6, 2015) about realization of VIBEG agreement, supported by other eNGO respondents].

Additional to negotiation strategies, the eNGOs exert their power by lobbying the government. This strategy is used to create political support for their position and can be undertaken at the various stages of the Natura 2000 MPA policy process, as visualized in figure 7 (Interview 6, 11, 16, 2015). Striking for the green coalition, is that most of their lobby activities concentrate on the executive level with governmental officials responsible for preparing the MPA management measures. To a lesser extent, they undertake lobby activities at the level of the parliament – the level where ultimate decision making occurs: *"We noticed that the political lobby of the eNGOs is far less pronounced – if present - than that of the fishery. To a much lesser extent the eNGOs (know how to) approach the parliament for their political lobby. Instead they exert their influence by negotiating the program of measures with us (EA and I&E governmental officials) and the fishery."*

*During these negotiation rounds they have proven to act flexible in meeting their goals for the sake of reaching a compromise with the fishery sector* (Interview 11, 2015).” When taking into account the current pro-fishery and liberal political climate, this strategy makes sense. Lobbying the Parliament in the current climate will most likely result in a loss of time and financial resources. Instead, the executive level of policy making is less dynamic and sensitive for political perils than at the level of the Parliament (Interview 11, 2015).

### *Knowledge*

A second important resource used by the eNGOs is their use of scientific knowledge: *“everything we claim, is supported by science”* (Interview 6, 2015). In their efforts to set high protection ambitions within Natura 2000 MPAs, eNGOs justify their position during lobby and negotiation activities by bringing forward objective scientific studies and facts. Similar to the government, IMARES is the most important supplier of scientific data: they deliver the basic knowledge to fuel the negotiation position of eNGOs on North Sea MPAs (Interview 2, 13, 2015). Additionally, the eNGOs research a large body of scientific literature and deliver scientific reports themselves, to be able to inform the overall MPA design process. Governments are not obliged to consider information that is provided by the eNGOs. But, since they are seen as key stakeholders, the government takes this information seriously (Toonen, 2013).

### *Mobilization power*

A final resource used by the eNGOs is their ability to mobilize public society. Mobilization power lies at the primate of eNGOs and is an activity used to create public awareness for an environmental issue. When lobby and negotiation activities fail to realize political support for their position, the eNGOs challenge this lack of state-led initiatives for North Sea protected areas by mobilization activities, with the aim to generate public support for North Sea protection. Mobilization activities take different forms, but all have the general goal to bring the North Sea closer to the larger public. Then, the North Sea can grow to be a subject of public opinion and not merely a subject discussed within the walls of policy making (Interview 6, 13, 18, 2015) **2015**]. Overall, three types of mobilization strategies are distinguished:

1. Visualize the North Sea. Connecting people to the North Sea is important, but challenging. The North Sea is not an area people experience in their daily lives. As a consequence of its cold water, rough and unpredictable character the underwater world of the North Sea is difficult to access (Interview 6, 18, 2015). Therefore, instead of bringing people to the North Sea, eNGOs bring the North Sea to people: *We want to show that the North Sea is more than the grey matter the public sees when walking at the beach of e.g. Schevingen. It is the largest nature park of the Netherlands, but in order to realize that, people need to be able to know and experience the North Sea Nature* (Interview 16, 2015). *“We need to show the public how beautiful the underwater world of the North Sea is. Because with knowing, comes caring”* (Interview 6, 2015). A particular eNGO that is specialized in visualising the underwater world of the North Sea is organisation *Dive the North Sea Clean* (In Dutch: Duik de Noordzee Schoon (DDNZS)). Two times a year, they undertake prominent North Sea expeditions. During these expeditions they collect images of the richness and beauty of the North Sea, as well as the damaging impact of fishing nets on biodiversity. Next these images and important outcomes of

the expeditions are widely distributed through media channels to the wider public (Interview 17, 2015).

2. Campaigning. This strategy is used when negotiation and lobby activities fail to deliver the desired result, but eNGOs still want to enforce decision-making or a change of action. Well known NGO in this domain is Greenpeace. A clear example in which Greenpeace putted the North Sea paper park issue under the attention, was their action where they threw rocks on the Cleaver Bank in May 2015. With this action they generated public and political attention for the absence of conservation measures in the North Sea Natura 2000 MPAs (Interview 13, 16, 2015).
3. A more indirect strategy of mobilization is the financing of projects that aim to create attention for the North Sea. One of the clearest examples is the financing of the aforementioned North Sea expeditions organized by Dive the North Sea Clean (Interview 16, 19, 2015).

It is difficult and outside the domain of this research, to define the direct correlation between these mobilization strategies and the effect on the public support for North Sea protection. However, interesting to mention is that research done by GfK has indicated that overall public society has become more aware of the North Sea, and 25% of Dutch society is in favour of North Sea marine reserves (Dijcks and van den Bemd, 2015).

### 6.3.3 Environmental Discourses

Within the environmental domain, several discourses have been detected in relation to the current Natura 2000 MPA policies on the Dutch North Sea.

Prominent discourse within the eNGOs, is the perspective that the North Sea is a nature area and protection of its ecological values is utterly important (Interview 6, 13, 16, 18, 2015). Furthermore, Greenpeace, WWF and the NSF share the opinion that at least 30% of the total North Sea surface should be protected against harmful activities. Core is the limitation of damaging fishing activities such as trawl fishing. Additionally, they share the perspective that the protected areas should be large, consistent and completely closed for human activities (Interview 6, 13, 16, 2015). Exception, are areas that are closed for research purposes: it is crucial to obtain practical lessons on the ecosystem effect when closing a North Sea area for a certain amount of years, to be able to draw conclusions on the overall effectiveness of the conservation measures (Interview 4, 13, 2015).

Furthermore, within the green domain two discourses are detected, that are seen as important for current paper park policies.

A first perspective of the eNGOs as indication for paper park policies, is the prevalence of a discrepancy between short term costs and long term benefits of North Sea MPAs: *“Currently, the fishermen only see the short term limitations. Natura 2000 policies will take away their valuable fishing grounds, that they need for economic survival. This perspective collides with the eNGO vision of long term biodiversity recovery of the North Sea, which will ultimately result in healthy fishing grounds”* (Interview 13, 2015). Establishment of Natura

2000 MPA policies, is based on these short term conflicts, and there is limited attention for the joint long-term vision of both eNGOs, fishery sector and government: *“On the long-term we all share the same interest and vision: a rich, healthy and resilient North Sea. Because investing in a healthy North Sea, is also an investment in a productive North Sea”* (Interview 16, 2015). Current focus on short term losses, generates a situation where colliding interests prevail, stakeholder discussions focus on the negotiation of a square meter more or less protection, and weak compromises are the result (Interview 6, 13, 16, 2015).

A second perspective of eNGOs on current paper park policies, is the lack of governmental leadership and ambition. Natura 2000 is a legal framework, but the government does not provide a clear vision on how they will meet the prescribed obligations for Natura 2000 MPAs: *“Currently the government is too facilitating in their stakeholder engagement. Their strategy is to put all the stakeholders in a room, and let them negotiate the content of Natura 2000 on the Dutch North Sea, without providing clear guidance on the borders of negotiation. With stakeholder interests that are so far apart, this simply does not work* (Interview 16, 2015).” They argue that after years of negotiating, the results for North Sea protection are minimal. Natura 2000 MPAs are constructed on weak compromises, fishermen are not eager to comply. Furthermore, square meter discussions predominate, resulting in a postmark approach of small and fragmented patches of protected areas. These are difficult to enforce and it is questionable if they will contribute to the initial aim of marine conservation and recovery (Interview 6, 13, 16, 2015). Overall, the eNGOs agree that the government should show more ambition, decisiveness and leadership: *“they should take a leadership position and set a clear non-negotiable baseline for Natura 2000 MPAs. Within the borders of this baseline, stakeholders are allowed to negotiate, but the government is responsible for plotting a univocal vision and set clear targets, within distinct timeframes* (Interview 16, 2015; supported by other eNGOs).”

A final discourse hold by the eNGOs in relation to Natura 2000 policies, is oriented on future developments. Ultimately, the green sector aims to broaden the current sectoral approach of North Sea MPA implementation to a regional approach of establishing an ecological coherent networks of protected areas (Interview 6, 13, 16, 2015). *“Current focus of Natura 2000 on the North Sea, is the protection of single species, benthic fauna and individual habitats. Initially, Natura 2000 is developed as a policy instrument for the creation of ecological corridors and a coherent network of protected areas; first solely land-based, but afterwards also in the marine environment. Ultimately, it is about representative protection of the North Sea ecosystem, not single species or benthic fauna* (Interview 3, 2015). Central vision is Ecosystem Based marine Management (EBMM), which defines an approach that takes into account the entire marine ecosystem, including humans (Foley et al., 2013: 1). EBMM explicitly recognizes to move beyond fragmented species or sector based marine management approaches, towards management and protection of the integrated ecosystem. Furthermore, it emphasizes that humans are part of the ecosystem and no independent and external resource user (Foley et al., 2013; Raakjaer, 2014). In this contexts, eNGOs promote a more holistic and regional perspective on the North Sea: *“No longer a square meter tunnel vision, but an integrated approach, where the economic stakeholders on the North Sea investigate how they can add economic value, without compromising the ecological values of the North Sea. For instance, transfer current monoculture within the fishery sector, towards more heterogeneous and sustainable fishery business, introduce multi-*

*purpose cutters that can conduct other North Sea activities besides fishing and facilitate more of such North Sea innovations.* (Interview 16, 2015).

## 6.4 Fishery

### *Coalitions, resources and discourses*

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#### **6.4.1 Fishery actors and Coalitions**

At the opposite site of the negotiation table, the fishery sector competes against the aim of the eNGOs to close large North Sea areas for fishing activities. Within the Dutch fishery sector, the majority of fishermen are organized within two organizations: VisNed and the Dutch Fishery Organization. They function as trade unions for fishermen and represent their interests as a spokesmen between the fishermen and the government (Interview 9, 10, 2015). During Natura 2000 MPA negotiations, they are the leading negotiation partners from the side of the fishery. In a coalition with aforementioned governmental officials and eNGOs, they represent the interests of the fishery sector, when discussing fishery measures for the MPAs. Most important aim is to retain their fishing grounds as large as possible, and thereby provide a voice against the influence of the green sector (Interview 11, 2015).

The fishery sector is split in two type of actors: (1) actors operating at the executive level - the actual North Sea fishermen, and (2) actors operating at the professional level - the fishermen's unions. In case of the VIBEG agreement, the unions continuously mediated between fishery interests at one side and the obligations of Natura 2000 at the other: by consulting the fishermen they indicated if proposed measures were acceptable and during negotiation rounds it was their goal to limit the economic impact of measures for the fishermen (Interview 9, 10, 2015). Ultimately, this multi-annual stakeholder process resulted in the VIBEG zoning proposal, as already discussed.

In these negotiations, the fishery unions try to represent the Dutch fishermen interests the best they can. But, controlling and representing their members is challenging, because they cannot be united in the same category (Interview 6, 9, 11, 16, 2015). *"We are not an unanimous group. Fishermen are each other's competitors; they fish on the same resource and one gains more profit than the other. It is pure business* (Interview 9, 2015)." Protected area establishment enhances this effect: *"Management measures can be convenient for one type of fishermen, but deadly to the other. Furthermore, the measures can cause a conflict of interests: the fishermen that loses his fishing grounds, will start fishing on the grounds of his neighbour. The remaining fishing grounds become more crowded and increase tensions between the already competitive fishermen* (Interview 9, 2015)." The resulting situation is one where fishermen oppose any form of closed area management, and a large group already indicates non-compliance prior to any type of agreement made between the government, eNGOs and fishery unions. For instance with the VIBEG agreement: shrimp fisheries in the North Sea Coastal Zone claimed that Natura 2000 would cause them a disproportionately economic disadvantage. In a counter-reaction to the zoning proposal, they ignored the severe negotiated agreement and continued their fishing activities within closed zones. Additionally, they started a separate appeal and managed to reopen the VIBEG agreement for further negotiation. This action enlarged frustration of the eNGOs and further sharpened the bad relationship between the fishery sector and eNGOs (Interview 9, 10, 11, 2015).



### 6.4.2 Fishery Resources

Multiple resources are used by the fishery sector to influence the Natura 2000 MPA policies on the North Sea. Most of these resources are deployed by the fishery unions, since they know the network and entries where the largest impact can be achieved. But to some degree, North Sea fishermen have their methods to influence the process of MPA implementation.

#### *Legitimate spokesperson for fishermen*

Similar to the eNGOs, an important resource of the fishery unions is their legitimate position at the stakeholder negotiation table. Selected as fishermen representatives, the unions defend the interests of North Sea fishermen during multi-stakeholder negotiations with governmental officials and the eNGOs. These negotiations take place at the executive governmental level, often in the context of VIBEG or FIMPA discussions. Here they try to keep the economic impact of fishery measures as limited as possible. They aim to limit the amount of full-closure zones and keep the protected areas as small as possible (Interview 9, 10, 2015). This is in direct conflict with the negotiation targets of the eNGOs. In line with the eNGOs, the fishery sector considers the multi-stakeholder negotiations little effective in bringing the desired result. In specifying a reason for this ineffectiveness, they also indicate conflicting interests and the increasingly hostile relation with the green sector (Interview 9, 10, 2015). But in this context, accusations are directed towards the eNGOs: *“the eNGOs dominate the negotiation processes: by following the precautionary principle, ecological values are always considered more important than the economic interests of the fishery sector. However, the foundation of these ecological arguments, leave much to be desired (Interview 9, 2015).”* Additionally, they underpin that their stakeholder participation is not considered seriously: *“We are invited to the negotiation table and are asked to deliver MPA design proposals. Developing these proposals have cost a great deal of work, but in the end provide us nothing. The closed areas are located exactly at our most valuable fishing grounds (Interview 9, 2015).”*

#### *Strategic lobby position*

Besides the executive level, stakeholder interviews showed that the fishery sector influences the Natura 2000 MPA policy process at a second governmental level. When negotiations with the government and eNGOs do not bring the desired results, the fishery unions directly consult members of the second Chamber, with whom they have close contact (visualized in figure 12 by the dotted arrow). Therefore, a second and influential resource of the fishery sector is their strong and strategic lobby position (Interview 11, 2015). Generally, the fishery sector has a good relationship with the Dutch government (Interview 9, 10, 11, 2015). This can be explained from the perspective of political prioritisation discussed under governmental discourses in chapter 6.2.3. The current liberal political climate, in combination with the deeply rooted cultural position of the Dutch fishery sector, results in a pro-fishery political coalition. Together, these factors of strategic lobby, economic prosperity and emotional value, makes the Parliament sensitive for fishery arguments, putting the sector within a powerful position.

#### *Knowledge*

Similar to the government and the eNGOs, the use of scientific knowledge is an important resource for the fishery sector to strengthen their position in the Natura 2000 MPA debate. Dominant supplier of scientific



data is IMARES, They deliver the facts, on which the fishery sector constructs their arguments (Interview 9, 2015). The fishery sector particularly anticipates on scientific knowledge gaps and uncertainties when lobbying or negotiating their position. *“Our aim is to let fishermen fish. Therefore, we demand a very clear justification on the benefits and necessity of protected areas. We have an open attitude for discussing protected measures, as long as arguments are explicable and based on facts”* (Interview 10, 2015). In this regard, fishermen and fishery unions often refer to the ‘plaice box’ example: *“Twenty years ago, this area above the Wadden Islands was closed for large cutters, for the recovery of fish stocks. Now, twenty years later, still there is no sign of recovered fish stocks: the area is one large desert. Fishermen often use this argument to claim that chasing them off the fishing grounds, will not guarantee recovery”* (Interview 9, 2015).

#### *Mobilization power*

A final resource used by the fishery sector is their mobilization power. It is less pronounced than with the eNGOs and mostly undertaken by groups of fishermen instead of the unions. Examples are campaigning strategies in which fishermen threatened to close the Rotterdam harbour, when protection measures would be approved, or protesting at the Binnenhof in The Hague (Interview 1, 4, 2015). Another example was their formal appeal against the VIBEG agreement and re-opening of negotiation procedures (Interview 1, 11, 2015).

### **6.4.3 Fishery Discourses**

The fishery sector holds several discourses in relation to the current Natura 2000 MPA policies on the Dutch North Sea.

Prominent discourse held by the fishermen, and in direct conflict with the eNGOs, is their North Sea perspective as a resource to utilize. The North Sea is the fishermen’s backyard: they know it as the back of their hand and as long as they can remember, their fathers and grandfathers have been able to fish on the North Sea (Interview 9, 10, 15, 2015). This conservative culture still dominates within Dutch fishery communities: *“they want to be at sea and fish; catch as many fish as possible, within the shortest amount of time”* (Interview 15, 2015)."

A second discourse that dominates within the fishery sector is their questioning of the effectiveness or need for protected areas. In this perspective a discrepancy exists between the fishermen and fishery unions: *“you can deny there is a problem, or have a problem with the management results for dealing with the issue”* (Interview 11, 2015).

Foremost, the fishery unions want to safeguard the economic survival of their fishermen and protect the existence of their fishing activities. Thereby, the unions recognise the necessity of a long-term healthy and rich North Sea, for which sustainable fishing activities are necessary. But, they question the effectiveness of closed area management in achieving this goal, for which the plaice box example is their proof (Interview 9, 10, 2015). They emphasize that closed area management should be based on facts, and not solely the precautionary principles that dominates Natura 2000 MPA policies at this point (Interview 10, 2015). But, if closed area management is necessary to guarantee healthy fish stocks and long-term

survival of the fishery sector, the unions have an open attitude for discussing possibilities. However, they emphasize that the closure of small, specific areas is also possible and sufficient, instead of the large squares suggested by the eNGOs. With today's technology, enforcing small spots does not have to be an issue (Interview 9, 10, 2015).

Contrary, a large group of fishermen deny the overall problem of biodiversity loss and collapsing fish stocks and do not see the necessity of protected area management: *"why do we need protected areas? Current North Sea fish stocks are as high as they have not been in years"* (Interview 10, 2015; about vision fishermen). *"Closed area management is nonsense. Just let us fish"* (Interview 9, 2015; about vision fishermen). In literature it is argued that fishermen see MPAs largely as a strategy of eNGOs to get their desired no-take zones or closed areas (Toonen, 2013). However, a generation shift is noticeable. When not counting exceptions, the younger generation is more flexible and open to discuss North Sea regulations, than their older conservative fathers and grandfathers (Interview 10, 2015).

A third discourse can be found in the overall traditional image of the fishery sector in the Natura 2000 MPA debate. The fishermen can count on ample sympathy of government and society. They are the victim of largescale space loss on the North Sea: *"We are limited by fish quota, fish days, EU laws and regulations prescribing the mesh size of our fishing nets. Then also closed areas?"* (Interview 9, 2015). Contrary: *"the biologist and eNGOs are still framed as the alternative 'open sandals and woollen socks' types, who value nature beyond everything. Whilst the fishermen are honest artisans, who earn their income with blood, sweat and tears"* (Interview 4, 2015). This cultural-traditional picture is a powerful instrument in the political lobby of fishermen (Interview 4, 11, 2015). Additionally, a strong island culture dominates within fishing communities. For many decades, fishing is what they do, what they know and what they love doing most: *"we know and understand the North Sea, and now some foreigner will tell us what we can and what we cannot do?"* (Interview 9, 2015). Instead of regulations, fishermen prefer to solve their own problems: *"don't try to regulate us, for decades we already solve our own business"* (Interview 15, 2015). The fishermen's pride and deep-rooted frames, makes it difficult to involve fishermen within North Sea Natura 2000 policies and to make them comply to MPA management measures agreed between government officials, eNGOs and fishery unions.

## 6.5 The Natura 2000 MPA Policy Arrangement

Analysing the different dimensions of the Natura 2000 MPA policy arrangement on the Dutch section of the North Sea, generated a detailed understanding of stakeholder interactions and institutionalization of North Sea MPA policies. A short recap on these structures and dynamics provides insight in dominant Natura 2000 governance structures and discourses, that fuel current paper park policies.

### 6.5.1 Natura 2000 MPA governance structures

Based on the discussed rules of the game, dominant stakeholders, their coalitions and resources, it can be stated that the governance structure of the Natura 2000 MPA policy arrangement is top-down oriented, with elements of bottom-up governance. Having the dominant governance structures clear, is valuable for understanding current North Sea MPA structures and organisations. However, the more interesting question and ultimate aim of this research is to unravel why the current MPA governance approach is ineffective in achieving North Sea conservation objectives, of which current paper park policies are proof. In this regard, the PAA analysis has provided some interesting results.

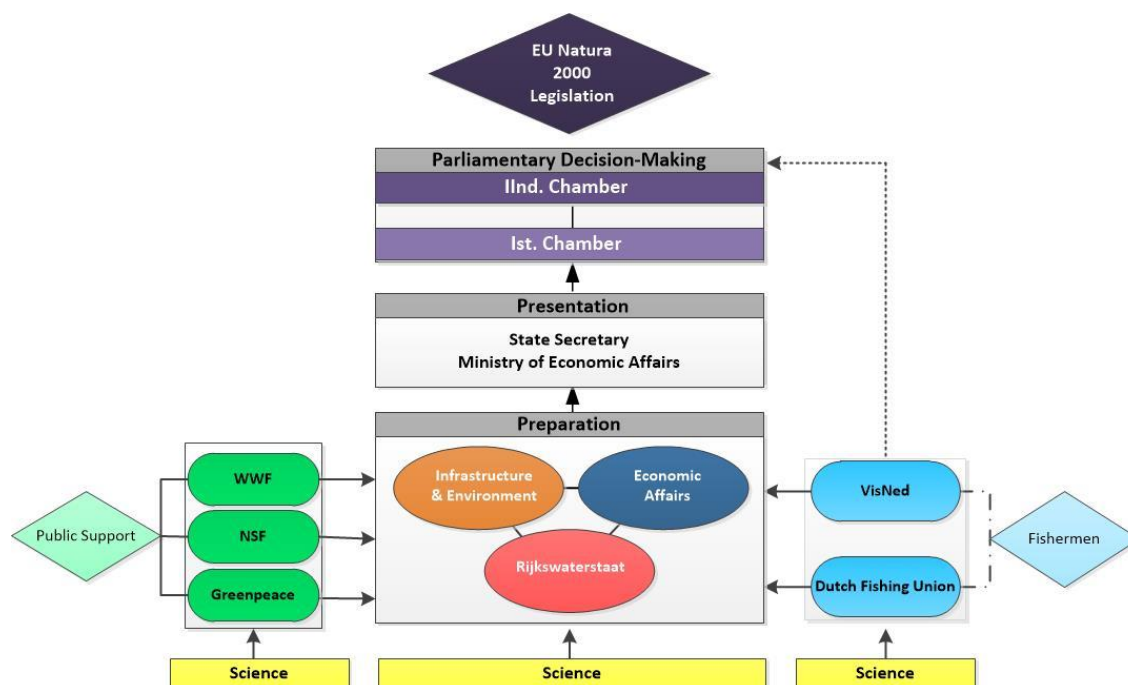
Considering the rules of the game, an important inconsistency is the large procedural gap between formal designation of Natura 2000 MPAs, and the informal stakeholder negotiations of MPA management measures within the areas. Designation occurs in a formal, hierarchical setting, steered by EU Natura 2000 legislation. During this crucial step zero, MPA location and lines are discussed in isolation from society, between the Dutch government and scientists. When the government has formalized its EU obligations, they open the gates for stakeholder participation to negotiate the content of management measures. Overall in scientific literature on MPA governance (See for example Gleason, 2013; Jones, 2014; Jones et al., 2011; Rossiter and Levine, 2014) this combination of forcible top-down regulation, a solid scientific foundation, and bottom-up engagement is often valued as a promising approach to MPA establishment. However, within the Natura 2000 policy arrangement this combination comes not to its right as a consequence of: societal stakeholder exclusion in step zero; highly conflicting interests between the eNGOs and fishery sector; missing governmental leadership and decisiveness; and the lack of clear targets and negotiation borders during MPA management stakeholder discussions. This top-down structure, without leadership and decisiveness, creates a complex social-political game of power, where stakeholders are eager to bend and stretch the rules of the game to safeguard their own interests. Core of discussion is no longer about how to reach North Sea conservation targets. Instead, it is about determining the right of the strongest and gaining political support for a square meter or percentage more or less closed North Sea area.

Regarding the actor dimension, all the discussed stakeholders, their coalitions and interactions are visualized in figure 12. Striking about this stakeholder interactions, is that the North Sea stakeholder arena is increasingly crowded with socioeconomic users and activities, but the Natura 2000 MPA domain is dominated by the Dutch government, eNGOs, fishery sector and scientists. From a scientific point of view, the legitimate position of eNGOs and fishery on the governmental negotiation table can be explained, because fishery activities are proven to be most damaging to the North Sea ecosystem (Lindeboom et al., 2005). Confirmed risk of this selective stakeholder group, is a tunnel vision on discussion of fishery measures within Natura 2000 protected areas, of which the VIBEG and FIMPAs procedures are clear

examples. The resulting situation is one where fishermen claim to be disproportionately disadvantaged, and conflicting interests between fishery and eNGOs are further polarized. Mutual recriminations fixate the Natura 2000 MPA process, in which the eNGOs accuse the fishery sector of no willingness to cooperate, and the fishery sector accuses the eNGOs of deliberate sabotage of their fishing activities.

An issue that further complicates the stakeholder arena, is the fact that the State-Secretary of the Ministry of Economic Affairs is responsible for both fishery and Natura 2000 MPA policies on the North Sea. Additionally, figure 6.3 shows the important role of the Secretary as interconnecting stage between the level of policy preparation and decision-making. Thereby, the Secretary is in a devils position of choosing between highly conflicting interests between the fishery sector, eNGOs, governmental officials and the Parliament. This double agenda, generates a situation where the ultimate ambition of the Natura 2000 MPA management plan depends on the personal agenda and decisiveness of the EA State-Secretary. Another inefficiency of this double agenda, is that the route of weak compromises is paved in advance, in an effort to justify the Secretary's position and keep all parties satisfied.

A final inefficiency within the stakeholder arena, is the prevailing disunity within the government and fishery sector. The disunity between the separate governmental levels, generates a government that lacks a clear, objective and decisive role in the Natura 2000 MPA policy arrangement. The same situation accounts for the fishery sector, where the fishery unions are not able to fully represent the interests of the actual fishermen (visualized by the interrupted relation between fishermen and the unions in figure 12). These internal fragmentations produce no mark of confidence to the other stakeholders and outside world.



**Figure 12:** Stakeholder actors, coalitions and interactions of main parties in the Natura 2000 MPA policy arrangement on the Dutch North Sea.

This theme of disunity and fragmentation is also key in the resource domain of the Natura 2000 MPA policy arrangement. Significant is the position of scientific institute IMARES as monopolist for fuelling stakeholder negotiations around MPA management measures with scientific knowledge. Scientific knowledge is no longer an objective instrument used to guarantee conservation objectives. Instead, the stakeholders strategically approach IMARES researchers, and collect arguments or reports that argue in their favour during stakeholder negotiations or lobby activities. This strategic use of scientific knowledge, turns the process of stakeholder participation in an ordinary game of power to bend and stretch the Natura 2000 MPA protection levels. The lack of governmental leadership and ambition within this part of the Natura 2000 MPA process, creates a borderless environment for stakeholder negotiation and influence. This extensive space provided to ventilate highly conflicting stakeholder interests, contribute to largescale policy delays, weak compromises and issues of compliance due to unsatisfying agreements.

A final resource that does not improve the situation, is the strategic lobby position of the fishery sector. When the heavily negotiated management agreements do not fit their interests, they use their Parliamentary shortcut to lobby for adjustments. As a result of the pro-fishery political climate, these Parliamentary activities have a high probability of success; the Parliament disapproves the management plan and the entire negotiation process can start over again.

### **6.5.2 Natura 2000 MPA discourses**

From an internal perspective, the Natura 2000 MPA policy arrangement and its relating paper park policies are controlled by one strong and dominating discourse. MPA establishment on the Dutch section of the North Sea is steered by a perspective of *'Ecology versus Economy'*. Characterising key concepts of this discourse are: stakeholder conflicts, disunity and power.

The Natura 2000 MPA policy domain is restrained by conflicting interests between the fishery sector and environmental NGOs; two actors that dominate the Natura 2000 policy arena. Within the already dense North Sea, eNGOs underpin the importance of closed area management to protect the ecosystem. In response the fishery sector hits defence, as they see their fishing grounds grow smaller and fear the economic survival of the sector. Besides, they highly question the effectiveness of MPAs for the recovery of the North Sea ecosystem. Overall, current top-down policy structures, in combination with vague negotiation borders, lack of governmental leadership and ambition, provide the stakeholder excessive space to influence, delay and re-open the MPA policies to safeguard their interests. Resulting in an ordinary game of power between the fishery sector and eNGOs, wherein ultimately, the most powerful party determines the policy outcome.

These conflicting relations are feed by a discrepancy between short-term and long-term interests. In the long-term all the stakeholders share the same perspective of a healthy and rich North Sea; because a healthy North Sea, is also a productive North Sea. But, currently short-term perspectives dominate the Natura 2000 MPA policy domain: Government and fishery sector do not want to bear the consequences of their long term vision. This results in long and heated negotiations on discussing a square meter more or less protected area, wherein the increasing hostile relationship between the fishery sector and eNGOs cause they are not

eager to make concessions. Finally, when an agreement is formalised by the Parliament, these are often based on weak compromises and compliance by the fishermen is not guaranteed.

From an external perspective, a second discourse is visible: current MPA policies on the Dutch section of the North Sea are dominated by a sectoral approach of protected area management. Focus of Natura 2000 is on the protection of individual sites, and there is little attention for the wider environment and ecosystem. North Sea management results in a patchwork of fragmented and small protected zones, as a consequence of heavily negotiated agreements. This discourse is feed by the outdated and rigid Natura 2000 framework. The initial design for land-based management, and protection focus on individual species and habitats is proven to be unsuitable for the marine environment. Although, indicated by the stakeholders as an inefficient, rigid, outdated policy tool, Natura 2000 still seems to be the only truth for North Sea protected area management. The stakeholders are prisoners of their own tunnel vision, wherein dominating controversies and inefficiencies create a policy situation that is completely locked.

## 7. Broadening the perspectives: alternative MPA discourses

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At this moment, Dutch MPA policies are dominated by the Natura 2000 legislative framework. The large procedural gap between rigid and isolated top-down designation of Natura 2000 MPAs at one side, and bottom-up development of their management plans, steered by highly conflicting stakeholder interests at the other side, has resulted in an inefficient and fixated MPA policy arrangement of which paper park policies are the result. Based on these inconsistencies, this chapter will explore and discuss new and upcoming perspectives on North Sea protected area management.

Stakeholder interviews and governmental reports discussing the future orientation of North Sea policies, demonstrate an emerging transition away from traditional sectoral approaches towards new forms of North Sea management. Interesting is the in 2015 published *North Sea 2050 Spatial Agenda*. This agenda recognises the increasing spatial pressures on the North Sea and considers a future in which North Sea spatial claims will become more dense. Increasing economic and recreational activities and an energy transition at sea, entail the risk of transforming the North Sea in the largest industrial area of the Netherlands. In order to control this future scenario, the Dutch government underpinned the need for a long-term North Sea vision, which they established in collaboration with scientists, market parties and a broad range of people from civil society. Core of this vision is the development of a safe, healthy and ecological diverse North Sea, which takes into account ecological and social- economic needs, while supporting the recovery of a resilient system that is able to withstand future pressures and ensures a flexible, yet robust use of the North Sea (Abspoel and Vis, 2015).

Within this emerging transition, two discourses can be detected. In this chapter these discourses and related initiatives are focus point of discussion. Particularly interesting to investigate, is whether these perspectives are able to counterbalance the current institutionalisation of the North Sea Natura 2000 MPA policy arrangement and steer change in stabilized paper park policies.

### 7.1 North Sea Broad Discourse

A first upcoming North Sea discourse is one that thinks in terms of the sea, and holds a '*North Sea Broad*' perspective. Current land-based approach to North Sea ecology and resource management, is replaced by a notion that takes into account the borderless and integrated character of the sea. A trend becomes clear, where stakeholder respondents acknowledge the need to shift current sectoral and separated approaches of North Sea management, towards a regional North Sea broad vision of marine management (see for example (Abspoel and Vis, 2015; Minisry of EA and I&E, 2014a; Ministry of EA & I&E, 2014b) (Interview 1, 4, 11, 16, 2015): "*We are shifting towards system thinking; instead of a sectoral approach focused on individual species and habitats, a more integrated vision on ecosystems and the development of the North Sea becomes visible*" (Interview 1, 2015). Discussion of Natura 2000 MPA discourses, already mentioned stakeholder interests in such a regional approach: governmental respondents mentioned the 'copy-paste' philosophy of Natura-2000 from land to sea insufficient to effectively protect the highly integrated ecosystems at sea, and eNGOs aim for a network vision for the establishment of North Sea MPAs, focussing on representative protection of North Sea ecosystems, instead of individual species and habitats.



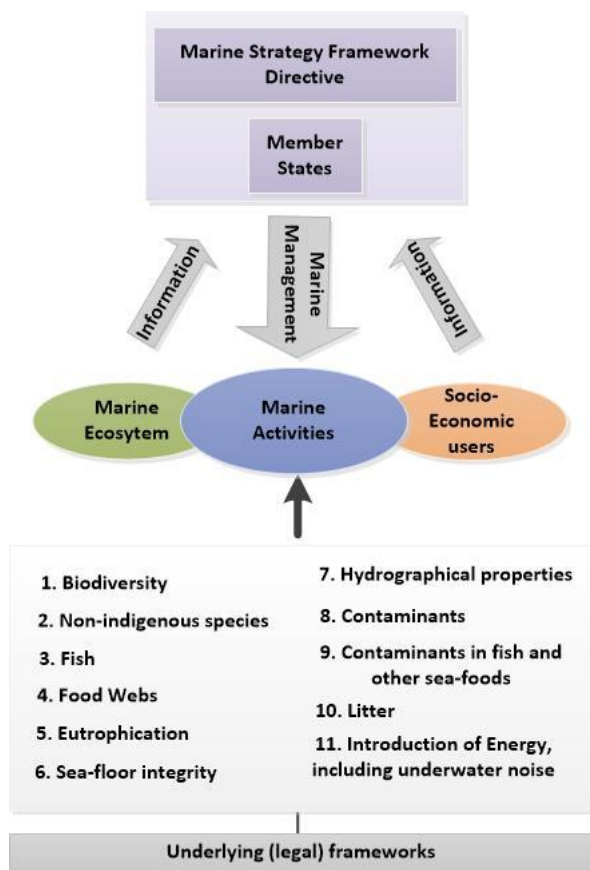
This North Sea broad discourse entails a new vision on the organisation of MPA planning processes. Core of a North Sea broad vision includes two principles. First, starting point of discussions about North Sea protection should be the entire North Sea; not a pre-selected number of designated areas as is the case with Natura 2000 areas. It is a shift in mind-set. North Sea protection is not solely controlled by a pre-described list of species and habitats, but takes into account the full North Sea ecosystem and focus on increasing the overall health of the ecosystem. Secondly, it should ensure stakeholder participation and flexibility earlier in the process, at the first point of area identification (Interview 4, 16, 2015). Thereby this discourse follows the argument of Chuenpagdee and colleagues (2013), by emphasizes the importance of stakeholder participation at step zero of the process. Starting from a regional North Sea perspective, stakeholders from scientific, social and economic backgrounds are included in the very first step of MPA establishment. Within this open environment, they can negotiate a common base for North Sea MPA policies by collaborative discussion on the procedural and geographical boundaries of the MPAs. It is about key questions as *what are they for? Why are they needed? Where should they be located? Which activities are allowed?*

Indicated as most important mistake of Natura 2000 MPA policies is *“the exclusion of stakeholder negotiations during designation procedures, and the allowance of stakeholder negotiations on management measures within the designated areas”* (Interview 4, 2015). This is not to say that stakeholders should not have a voice in the discussion of management measures, but they should be included earlier in the process when the lines of the areas are drawn. The nuance is subtle, but the effect can be tremendous. It can help diminish the procedural gap between current processes of MPA designation and management, improve stakeholder relations, and greatly improve stakeholder support for the overall MPA measure.

### 7.1.3 Marine Strategy Framework Directive

Within this North Sea Broad perspective, much is expected of the Marine Strategy Framework Directive (MSFD). This Directive is a relatively new European policy framework, that obliges the EU Member States to *‘draft a program of measures to reach a good environmental status of the European seas by 2020’* (Ministry of EA and I&E, 2014b: 1). Unique feature of the MSFD, is its design as a policy framework to steer decision making at sea: *“it is the overarching framework for designing marine policies; ‘the conscious of the sea’, so to say”* (Interview 1, 2015). By following EBMM principles, the framework aims to facilitate a transition from current fragmented and sectoral EU marine policies, towards an overarching and regional integrated framework for marine management. In doing so, the MSFD combines existing (inter)national marine guidelines and policies of hard and soft law under one directive (van Leeuwen et al., 2014; Interview 1, 2015).

When discussing the MSFD in the context of governance structures and its value to North Sea protected area management, several things become clear.



**Figure 13:** Organisational structure of the MSFD. Marine Management of the Dutch North Sea is top-down coordinated by the EU and Dutch government, but supports bottom-up participation from a broad range of stakeholders. Marine activities are controlled through eleven qualitative pillars, leaning on their underlying (inter)national guidelines or legislation (based on (Based on Raakjaer et al, 2014).

Regarding governance structures, the organisational visualization of the MSFD in figure 13, clearly shows the top-down, hierarchical character of the framework in steering marine policies. The Marine Strategy Framework guidelines at the top, requires all EU Member States to develop a national marine strategy for the management of their marine activities. This national strategy should be developed in close collaboration with other Member States to ensure cross-jurisdictional consistency. Currently, the Dutch government is in the final phase of accomplishing their national strategy and is waiting for approval on the draft program of measures (Ministry of EA and I&E, 2014b). Double function of the program is to protect and restore the North Sea ecosystem, and ensure a sustainable character of socioeconomic North Sea activities. This is visualized in figure 13 by the bottom-up information arrows, that represent stakeholder participation and input on the North Sea ecosystem and its socioeconomic activities. Thereby, the framework recognises that humans are part of the ecosystem, and considers close collaboration with a broad range of stakeholders

addressing the ecological, social and economic dimensions of the North Sea, as an important strategy to ensure a good environmental status (Ministry of EA and I&E, 2014a). Therefore, the MSFD promotes a broad range of stakeholder participation. Issues of marine management will not solely enfold between the fishery sector, eNGOs and the Dutch government, as is the case with Natura 2000. Instead, all the uses and values of the North Sea are taken into account. Involving this broad range of stakeholders, might help reduce the fishermen's vision of them being the only victim of N2000 MPAs, which can diminish their hostility towards the measure and increase cooperation.

Similar as Natura 2000, the MSFD follows a combination of top-down implementation and bottom-up participation for developing marine management. However, important difference is the open and broad perspective of the MSFD for implementing marine management approaches. Whereas, Natura 2000 is rigid and fixed, the MSFD is developed as a guideline. It prescribes only one legal obligation: implementing a marine strategy to reach a good environmental status of the Dutch North Sea by 2020. The *how* question for reaching this status is left to the Member State: *"The MSFD is a guideline, a steering tool and does not prescribe explicit legislation for implementation. It is established from an ecosystem perspective, aiming to be flexible and responsive towards the dynamics of the marine system. Ultimately, the extent to which the MSFD*

*has an effect, depends on the ambition and prioritization of the Member State*" (Interview 1, 2015; supported by interview 7, 2015).

If it is a guidance tool which effectiveness still depends on the governmental ambition of the Member State, important question is the added value of the MSFD for realising North Sea MPAs compared to Natura 2000 legislation. In this context, it is important to realise that protected area management is solely one area of attention of the MSFD. The aim of reaching a good environmental status, addresses the management of all ecological, social and economic activities taking place on the North Sea: *"Basically everyone who has an interest or activity on the North Sea, is involved with the MSFD"* (Interview 1, 2015). The Dutch government has captured these interests and activities within eleven qualitative pillars, visualized in figure 13. Each of these themes is constructed on existing (inter)national legislative frameworks of hard and soft law. For instance, the Common Fishery Policy (CFP) is leading for the fishery pillar, the MARPOL agreement on marine pollution is an important framework for regulating marine contamination and litter, and Natura 2000 (hard law) together with OSPAR (soft law) are still leading frameworks for North Sea MPA policies (Raakjaer et al., 2014; Interview 7, 2015) (Interview 7, 2015).

Additional value of the MSFD compared to Natura 2000 is twofold. First: *"The MSFD provides a policy program designed for decision making at sea"* (Interview 1, 2015). Instead of a land-based instrument being copied to the marine environment, the MSFD follows the laws of the sea; recognises its borderless environment and takes into account its integrated and dynamic character. Against the outdated and conservative claimed Natura 2000 framework, the MSFD is promoted to be progressive, flexible and therefore more suitable for effective protection of the marine environment (Interview 1, 3, 7, 11, 2015). Second: *"the MSFD includes more opportunities for effective conservation, as it includes more and renewed indicators to qualify areas"* (Interview 1, 2015). Because the MSFD covers a broader range of themes than Natura 2000, it provides also more possibilities to assign marine areas for protection. Particularly the theme sea-floor integrity broadens perspectives. Clear examples are the North Sea areas *Frisian Front* and *Central Oyster Grounds*. In ecological terms, sea-floors of the areas are interesting enough to be protected, but do not meet qualification criteria of the Habitat Directive. However, sea-floor integrity indicators provide opportunities to protect the areas under the MSFD. Overall, the framework considers hard substrate as an important indicator for the protection of biodiversity values (Interview 3, 11, 2015).

All these MSFD elements together, generate a flexible and integrated tool that allows North Sea protected areas to take place from a wider approach or different angle than Natura 2000. Although top-down organised, these characteristics create more room for societal and market based initiatives promoting the protection of North Sea ecological values.

If the MSFD is able to counterbalance current inefficiencies of Natura 2000 paper park policies on the Dutch North Sea, remains a question to be answered. Because the framework is relatively new, it is not fully institutionalized. Currently, Member States are at the initial stage of implementing the framework by developing marine strategies, so its practical use and effectiveness for protected area management cannot be evaluated yet. But overall, the framework's ecosystem approach and umbrella design, are regarded as a promising development for marine management by the research respondents, and is mentioned as the

future arrangement of organising North Sea activities within leading Dutch policy documents (see for instance (Abspoel and Vis, 2015; Ministry of EA and I&E, 2014a). In relation to North Sea MPAs, the MSFD goes beyond Natura 2000 and provides new opportunities where the jurisdictional borders of Natura 2000 stop. The MSFD lists more and renewed indicators to effectively protect North Sea ecological values, making it possible to protect the entire water column and hard substrate, instead of a limited list of species and habitats as is the case with Natura 2000 (Interview 1, 7, 2015).

Nevertheless, implementation of the MSFD is not without risks or criticism. The framework is accused of extrapolating the existing: it combines existing frameworks such as Natura 2000 in a renewed frame, without promoting clear coordination strategies to reduce fragmentation. Without explicit strategies that cover cross-sectoral collaboration and coordination between nations, legislative frameworks and stakeholders, it is expected that the MSFD will not live up to its expectations of promoting an ecosystem wide approach to marine management (Raakjaer et al., 2014; van Leeuwen et al., 2014). Risk of not having a unified application context for North Sea MPA policies, is that the MSFD will enhance the complexities and political games of power within the MPA policies arena. The MSFD will simply add an additional governance level to the MPA policy arena, where stakeholders can shop for legal confirmation of their interests. For example: fishery organisations can refer to the CFP in their defence against protected areas, whereas eNGOs can refer to concepts as sea-floor integrity and protection of cultural heritage in their defence of promoting protected areas. Controlling these risks by developing a clear application context is an important future field of attention for institutionalising the MSFD as a leading policy arrangement for marine management. Otherwise, the MSFD faces the risk of becoming as inflexible, static and rigid as Natura 2000 in steering protected area management on the North Sea, which will fuel current paper park policies.

## 7.2 Ecology and Economy Discourse

A second upcoming discourse within the domain of North Sea protection, is one of '*Ecology and Economy*'. This discourse arises from two trends. First, in the current political climate there is limited support for nature protection as individual theme. The economic crisis of 2008 and liberal government, have established a situation in which economic prosperity is valued more important than biodiversity protection (Interview 1, 4, 7, 11, 16, 2015): "*the time of creating new nature for the sake of nature has passed*" (Interview 1, 2015). Secondly, the increasing spatial pressures on the North Sea, ask for a future vision in which sustainable and smart spatial solutions are key (Abspoel and Vis, 2015)(Building with Nature, 2015). Therefore, in this second discourse North Sea ecology and economy are no longer two separated themes, but combined in an integrated North Sea vision. Characterising key concepts are collaboration, opportunities and innovation.

This vision creates new insights for North Sea protection, from a wider approach and different angles. Within this discourse, two sub-discourses can be detected: *Building with Nature* (BWN) and *Multi-functional Space use* (MFSU). Starting point of both themes is the combination of ecological, economic and social North Sea values and functions and the development of innovative initiatives for realising these combinations. Core difference, is that the primate of BWN is on the protection and creation of nature, while adding a

socioeconomic dimension to it, whereas the primate of MFSU is on the promotion of socioeconomic activities, but in such a way that North Sea ecological values are protected in the long term.

### 7.2.1 Building with Nature

In a political climate that prioritises economic prosperity over nature, BWN is an interesting approach for gaining political and socioeconomic support for the protection of North Sea ecological values. BWN can be defined as an approach that *“makes use of the North Sea and its nature in such a way it will promote the enhancement of the marine system, its nature and biodiversity”* (Abspoel and Vis, 2015: 19). Instead of mitigating and prevent negative effects on the North Sea ecosystem, it aims for innovative solutions that proactively contribute to the conservation and sustainable use of the North Sea ecosystem (Abspoel and Vis, 2015; Ministry of EA and I&E, 2014b).

The Dutch government is in great support of the concept and has included BWN as one of the central elements within the North Sea 2050 Spatial Agenda (Building with Nature, 2016). In collaboration with scientific institutes (e.g. IMARES, Bureau Waardenburg), market parties (e.g. sand mining, fishery entrepreneurs, wind park developers, oil- and gas industry, shipping, tourism) and other societal stakeholders (e.g. eNGOs, civil initiatives), the Ministry of Economic Affairs is developing the concept in a solid governmental program (Abspoel and Vis, 2015; IDON, 2015). Ultimately, the government is responsible for establishing the guidelines and a vision. But, in implementing this vision, the government works together with North Sea stakeholders in ad-hoc public-private partnerships. Bottom-up and market-based approaches are supported and North Sea stakeholders are stimulated to present creative and innovative proposals that fit the BWN program (Building with Nature, 2015).

Within society the interest for and popularity of the BWN concept is increasing: *“workshops to identify initiatives and opportunities, where amply attended. Representatives of governments, scientific institutes, oil- and gas companies, contractors, dredging companies, environmental NGOs, wind- , seaweed-, and fishing industry were all present, resulting in a wealth of out-of-the-box and innovative ideas and initiatives”* (IDON, 2015). Core of BWN is the deliberate use or creation of hard substrate on the North Sea floor. These (artificial) reef structures, are key for the creation of marine biodiversity. They act as a natural grip for marine life to settle, attracting other marine life and supports the occurrence of a small, but ecologically rich local ecosystem (Interview 1, 2, 2015). Some examples of initiatives have been provided by stakeholder respondents and the workshop *building with North Sea Nature* held in June 2015. These examples are shortly elaborated on and show their additional value for stimulating North Sea biodiversity.

#### Recovery of shellfish reefs

In the past, a third of the North Sea floor was covered with flat oyster reefs. This hard substrate resulted in a dynamic and rich North Sea biodiversity. As a consequence of bottom trawling activities and the occurrence of a disease, these flat oyster reefs have disappeared, leaving large sand plains (Interview 4, 12, 2015). The high ecological values of these natural reefs, have generated an interest within society to restore shellfish reefs. Multiple scientific institutes (IMARES, Bureau Waardenburg), environmental NGOs (WWF, Greenpeace, NSF), market parties (DelAgua, CVI Lelystad and SAS Consultancy) and also governments are exploring opportunities and locations to redesign natural shellfish reefs (Interview 4, 12, 2015)(Abspoel



and Vis, 2015). These investigations take place under the biodiversity pillar of the MSFD, which has set the conservation and recovery of marine biodiversity as an important aim. When possible, these reefs are able to attract 150 to 200 species that are dependent on the hard substrate of oyster banks.

Interests in the recovery of this natural reefs is twofold. The first is a matter of opinion: additional to a current trend of constructing artificial reefs, people of civil society and eNGOs also call for the reintroduction of natural reefs: *“The North Sea is the largest and most pristine nature area of the Netherlands, do we aim for a future in which all its dynamics are man-made? We should not forget that natural structures have an important experiential value of the Dutch public; something we can generate with the reintroduction of shellfish reefs”* (Interview 16, 2015). The second argument is about the scale potential of natural reefs. Artificial reefs are often ecological pinheads when compared to the overall North Sea ecosystem. Shellfish on the other hand, have the potential to grow into large acres of rich and natural North Sea reefs, increasing the comprehensive sea-floor integrity (Interview 4, 12, 2015). Important pre-condition for the recovery of these reefs, is that they are not disturbed by bottom steering pressures: *“it takes many years for these reefs to grow and recover, one harmful bottom trawler can undo this work”* (interview 12, 2015).

To investigate the potential and future orientation of these reefs, WWF started a shellfish recovery pilot project in the Dutch Haringvliet. Interesting about this pilot, is its bottom-up approach and success. With the financial support of the Postcode Lottery, the only resource provided by the government was its green light for construction (Interview 16, 2015). Important additional function of shellfish reefs along the coast, is to possibility to design them in such a way, they serve as a coastal barrier against erosion and floods (Building with Nature, 2015).

### Ship wrecks

On the North Sea floor a rich history of thousands of shipwrecks can be found (see Annex IV for map). Besides its cultural- historical value, interesting feature of these shipwrecks is that they serve as artificial reefs and create small ecological hotspots (Interview 17, 2015). Figure 14 shows three pictures of the underwater world of the North Sea. The left picture illustrates the sea-floor of Natura 2000 area the *Dogger Bank*, the middle shows several boulders in the North Sea area the *Borkumse Stones*, and the right is a picture of a shipwreck. These three pictures clearly visualize the impact of hard substrate on the occurrence of marine biodiversity: compared to the oasis of life attached to the wreck, the sea-floor of the Dogger Bank resembles a bare plain.



**Figure 14:** Left: sand floor Dogger Bank; middle: boulder Borkumse Stones, covered with deadmans finger coral; right: ship wreck covered with coral and algae, attracting codfish (Expedition Dogger Bank, 2015).



The Dutch organisation 'Dive the North Sea Clean' is committed to the preservation of North Sea shipwrecks. Twice a year they organise North Sea expedition in which the participants dive on ecological valuable areas in the North Sea, including ship wrecks. These expeditions deliver important information and images on the ecological status of the North Sea underwater world. Example of an interesting result is the presence of overfished species such as sea bass and codfish around the shipwrecks. Furthermore, the wrecks are important refuges, as they act as shelter and nursing grounds for marine species (Interview 17, 2015). However, one of the most interesting results is that these kind of artificial reefs support the settlement of species, that also occur or use to occur on natural reefs such as the disappeared flat oyster grounds (Interview 1, 2, 2015).

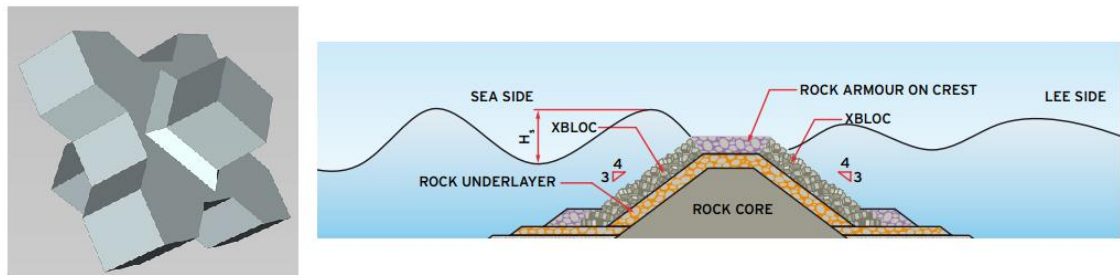
Taking these ecological values of shipwrecks into account, interesting investigation is if they can be protected under the MSFD. In this regard scientific research commissioned by Rijkswaterstaat, has concluded that this is a difficult topic (See Lengkeek and, 2011). Protection possibilities have been investigated under the biodiversity pillar of the MSFD. However, overall aim of the MSFD is to create a good environmental status of the European seas. In order to qualify for protection, shipwrecks should contribute to improving the overall environmental status of the North Sea. On a regional North Sea scale, these wrecks are small pinheads which have not proven to make a significant difference to the North Sea ecosystem. It should also be taken into account, that over the course of time shipwrecks will decay and therefore will solely act as a temporary ecological hotspot. Adding these up, the research concluded shipwrecks cannot be qualified as protected areas under the MSFD. Final resort is to look for protection possibilities under the Heritage Preservation Act. However, similar as Natura 2000 this is a land-based act, that does not work properly in the marine environment. Furthermore, it has not been ratified on the EEZ, making protection only possible within the territorial North Sea (Interview 1, 12, 2015). The lack of jurisdictional possibilities and an ecological interesting dimensions, makes it difficult to reach a conservation status for these artificial ecological hotspots. Nevertheless, in the North Sea 2050 spatial agenda their economic, cultural, historical and experiential values makes them an important subject of discussion and protection under the UNESCO convention is still being investigated (Abspoel and Vis, 2015).

### **Artificial reefs**

Besides shipwrecks, there is the possibility to deliberately create hard substrate structures on the North Sea floor. These artificial reefs are man-made structures, constructed with the aim to serve recovery of North Sea biodiversity (Building with Nature, 2015). The design opportunities of these artificial reefs are endless, but initiatives presented on the workshop Building With North Sea Nature (June, 2015) particularly showed their additional value in combination with other North Sea constructions. Crucial element of these constructions, is the inclusion of ecological design principles in the initial design. In this context two market-based initiatives were presented by construction company BAM, within their program '*Space for North Sea nature on hard constructions*':

- I. Enriching marine life on harbour piers. Target of this project was to renovate the harbour of IJmuiden. Important element of the renovation project was to take into account ecological design principles to support marine life in the harbour; both underwater and seabirds. Conceptual idea of

BAM was to renovate the harbour with ECO xblocs; a functional design of concrete blocks developed in collaboration with Deltares and Rijkswaterstaat. Innovative feature of these concrete blocks is its solid and firm construction for the piers, as well as its attractive design for marine species to settle or shelter, as visualized in figure 15. International pilot projects with these blocks, already indicated their success in reaching both targets. Ultimately, the project was cancelled, because the harbour of IJmuiden retracted the renovation. However, application of the xblocs is not bound to a particular project. It can serve the design of a broad range of other BWN initiatives. One example is their use in breakwater constructions. These offshore dikes serve economic, ecological and social purposes as they reduce risks of flooding, revive ecologies and connect people to the shoreline (Reedijk, 2015). Indicated as a major bottleneck for these types of ecological marine constructions, was the lack of budget: *“artificial reef structures that solely serve ecological purposes, have no economic additional value, which makes it very difficult to gain funding”* (Reedijk, 2015). Although initial design is meant to serve ecological purposes, its successful implementation highly depends on other functional properties (Building with Nature, 2015).



**Figure 15:** innovative design of ECO xblocs, ensuring both the solid construction of piers and dikes, and settlement and attraction of marine life (Delta Marine Consultants, no date).

- II. Smart design offshore windmill foundations. Development of offshore windfarms will play an important role in the future spatial planning of the North Sea (Abspoel and Vis, 2015). As the result of safety measures, these windfarms are strict no-go areas; creating the ideal marine protected area. However, to limit ecological disturbances, logically these farms are planned on North Sea grounds of little ecological value as much as possible. Interesting opportunity would be the application of artificial reefs and other biodiversity supporting structures in these areas (Building with Nature, 2015). Currently, windmills are constructed on straight and plain concrete foundations. BAM investigates the opportunity to design these foundations as enormous reef balls, visualized in figure 16. They still provide a solid foundation, but additionally can attract North Sea biodiversity by generating hard substrate, species retreats and nursing grounds (Reedijk, 2015).



**Figure 16** Reef ball shaped ecological foundation of offshore windmill (Building with Nature, 2015).

### 7.2.2 Multi-Functional Space Use

Multi-Functional Space Use (MSFU) is a broad concept that captures many ideas surrounding the functional use and division of space. On the North Sea the concept emphasizes the integrated, smart and efficient use of the limited space for conducting ecological and socio-economic activities (see table 2, p.33). It is a governmental response to the increasing spatial conflicts between ecological, social and economic interests in the North Sea. In this case, one type of space use, serves multiple interests: *“Multi-functional use of the North Sea is based on the integrated planning of time and space by combining functions”* (Abspoel and Vis, 2015). Spatial solutions can be sought in the combination of two economic activities – for example fishing activities within windfarms, or the combination between ecological and economic values. Within the scope of this research, only the latter is discussed in this chapter.

In many ways, the concept of MFSU is comparable to BWN. Distinguishing character is that MFSU explicitly search for answers to marine spatial conflicts and is enacted from the user perspective. This means that starting point is the development of a functional activity, and additionally opportunities for shared use or values are taken into account. Precondition for MFSU on the North Sea, is that one type of activity will not jeopardize the occurrence of the combined function (Abspoel and Vis, 2015).

Similar to BWN, MFSU is a trending topic supported by governments and other North Sea stakeholders. The combination of North Sea functions is a major component of the future vision for the North Sea and thereby one of the central elements within the North Sea 2050 Spatial Agenda. It suits the current political climate, since it provides more space for self-governance and private initiatives. In this sense, the role of the government moves to the background and acts more as a facilitator instead of initiator (Interview 1, 2015). Stakeholder interviews have provided three interesting initiatives combining economic and ecological North Sea values, and will be briefly elaborated in this chapter.

#### **Living North Sea Initiative – Riggs to reefs**

The Living North Sea Initiative (LiNSI) is a North Sea wide multi-stakeholder initiative exploring the ecological opportunities for the decommissioning of offshore oil- and gas installations. Active development of the project took place from 2010 until 2015 as part of IMSA consultancies. Here, scientific research into the possibilities of the project was conducted and broad engagement with North Sea stakeholders investigated their interest and further shaped the project. Currently, future orientation of the project is investigated by eco-effective strategies, together with many stakeholders who actively participated in the LiNSI concept (Interview 14, 2015).

The initiative is an example of MFSU because it combines offshore oil- and gas drilling with the promotion of North Sea ecological values. Similar as with shipwrecks, offshore platforms act as artificial reefs, attracting a broad range of biodiversity throughout its lifespan. Interesting feature of the platforms are their Eiffel Tower underwater shapes. These provide hard substrate, shelter and nursing grounds through the entire water column, attracting a broad range of marine species throughout the complete water system (Interview 2, 5, 14, 18, 2015). Current policies require full decommissioning and removal of the platforms, when its production activities have stopped. Besides removing a platform, a complete and unique ecosystem is removed from the North Sea. This fuelled a partnership between IMSA, IUCN and Shell to discuss

controlled decommissioning and retention of the platforms for the protection of its attached ecological values, which grown to be the LiNSI. Additional precondition of the initiative is to invest the money that is saved by not removing the platforms, in an overall North Sea fund used to conserve and stimulate its ecological values (Interview 5, 14, 2015).

The initiative is positively received by many North Sea stakeholders, especially the oil- and gas industry. Helpful is the delivered proof of concept by Rigs-to-Reef projects that are starting up across the globe. Striking examples can be found in the Gulf of Mexico. Here, the US has implemented a legal framework that supports the cleaning and decommissioning of phased-out platforms, to transform them into artificial reefs. At this moment, around 200 rigs have been transformed to reef, creating recreational, ecological and financial benefits (Interview 14, 2015).

Opposed to its supporters the initiative is also subject to much criticism. In the context of the North Sea 2050 vision, its ecological and the large financial benefits, governments see opportunities in the project. However, being a very sensitive topic in Dutch society, the government also fears the societal response when they decide to not remove platforms<sup>3</sup>. Within eNGOs there is a large division between supporters and opponents. Most important argument to not support the controlled sinking of ricks, is because they cannot justify it to their societal supporters. eNGOs always communicated that the platforms are hazardous for the marine environment and have played a major part in developing the strict legislation for offshore platforms, demanding the removal when their life span has passed. From a scientific perspective, there is little evidence that the platforms are harmful for the marine environment. Under strict regulations for decommissioning, there are not much claims to make against the sinking of platforms” (Interview 5, 14, 2015). However, they do underpin the overall image it will generate: *the government allows the gas and oil industry to dump their junk on the North Sea*” (Interview 14, 2015).

Overall, it can be concluded that the government, market parties, science and eNGOs see potential in rigs-to-reef projects on the North Sea, but the concept is also encountered with legitimate concerns from the same stakeholders.

### **The North Sea Farm**

A second interesting example of combining North Sea functions, is a rising trend for the production of marine proteins: seaweeds. Seaweed cultivation is a rapid expanding industry, expected to become an important food source in the future. Seaweed farms have already been established in the Oosterschelde, in the Dutch Province of Zeeland. *The North Sea Farm* is a market-based initiative established as part of *Schuttelaar and Partners Consultancies* and is the first Dutch North Sea seaweed cultivator. Their activities fit well within the MFSU North Sea vision of the government (Interview 8, 2015; Abspoel and Vis, 2015). Besides production of high quality marine proteins, seaweed promotes multiple other ecological and economic benefits and is an activity that can easily be combined with other North Sea usages:

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<sup>3</sup> Reason why non-removal of platforms is sensitive topic in Dutch society, is the result of the Brent Spar incident in 1995. The decision of shell to dump the out-phased Brent Spar platform in the Atlantic, resulted in heated discussions with and campaigning activities by Greenpeace. Media attention turned the issue in an intense national public discussion, making it a loaded subject until today. (for more information see (Molloy, no date) ).

- Nature conservation and restoration. Seaweed production generates interesting opportunities for stimulating marine biodiversity: *“you do not only extract something from the North Sea, but you also add something to the system”* (Interview 8, 2015). The farms function as ‘underwater forests’, capable to attract biodiversity by providing shelter, spawning- and nursery grounds. One of its most interesting ecosystem services of seaweed is that they function as a natural filter in cleaning the surrounding environments from pollutants or abundant algae. Thereby, seaweed farms can play an important part in the prevention of eutrophication and the establishment of a rich and nutritious environment. Finally, the farms can also compensate for nature impact: for instance after disturbing sand mining activities, sea farms are capable to kick-start the recovery of the ecosystem (Interview 8, 2015).
- Aquaculture. A second interesting combination is to couple seaweed farms to aquaculture. These new habitats are comfortable places for fish populations to settle. Furthermore, salmon farms in Norway proved that these seaweed-aquaculture farms are capable to close nutrient cycles: the fish emits organic waste, which provides the input for seaweed production, which in turn can be processed as fish food (Interview 8, 2015).
- Shellfish cultivation. Seaweed is also an attractive habitat for shellfish to settle. Shellfish production can be integrated in the same units to which the seaweed is attached, but can also on the sea-floor underneath the farms where the farms protect them from bottom disturbing activities (Abspoel and Vis, 2015).
- Combinations with coastal protection and windfarms. A final sustainable combination is seaweed cultivation with dikes, structures of coastal protection or within windfarms. Stacking these functions, prevents the farms from putting an additional claim on the scarce North Sea space. Additional, the farms provide a biodiversity boost to the otherwise concrete environments (Interview 8, 2015; Abspoel, 2015).

In promoting these activities, the North Sea Farm collaborates with an extensive network of partners from science, government, eNGOs, markets & consumers, industry, technology & innovation and recreation. Together with these partners, the North Sea farm aims to establish an integrated platform with stakeholder representatives covering the complete seaweed supply chain. The North Sea farm is a typical example showing the facilitating role of the Dutch government. In principle, the market-based initiative is self-supporting, but realized by the government by issuing a permit (Interview 1, 8, 2015).

### **Innovative fishermen: Ekofish Group**

A final example of the Ekofish Group highlights the opportunities for ecological and economic combinations in the fishery sector. The Ekofish Group is a fishing company in the traditional fishing community of Urk, who successfully transformed its business from harmful and inefficient trawling activities towards sustainable and efficient low-impact fishing activities. They realised this transformation in a partnership between WWF and the Marine Stewardship Council (MSC) (Interview 15, 2015).

For the Ekofish fishermen the decision to transform their business plan was the realization of the high economic losses involved with bottom trawling: *“a bottom trawler of 40 meters, uses around 30.000 litre of gasoil each week. With the rising fuel prices, this fishing method is simply not profitable”* (Interview 9, 2015). Therefore, right before the economic crisis of 2008, the fishermen decided to transform their bottom trawler into a low-impact twinrig fishing vessel: *“everything that had something to do with trawling was demolished and there was no way back. The transformation process was not easy and we suffered from start-up problems. But when the company was running, the results were astonishing: we were able to catch better quality fish, without destroying the North Sea bottom-floor, against a fraction of the expenses of bottom trawling”* (Interview 15, 2015). With the improved quality of their fish, the Ekofish fishermen wanted a better price for their products. In order to distinguish themselves on the market, they started the first MSC certification trajectory in collaboration with WWF and the MSC, and managed to be the first sustainable certified Dutch fishermen (Interview 15, 16, 2015).

Now that the Ekofish fishermen have witnessed the ecological and economic benefits of sustainable and innovative fishing methods, they continuously seek for new opportunities to improve their business. Against the background of decreasing fish stocks and shrinking fishing grounds, they decided to broaden their business model. Recently, they started a new trajectory for the construction of multi-purpose vessels. Besides fishing, these vessels can be used for other North Sea activities, such as offshore maintenance and supply, and recreational (diving) and educative activities. The vessel is based on an efficient design, allowing for fast transformation and switching between tasks (Interview 15, 2015).

A particularly interesting result of the Ekofish Group example, is that it shows that functional combinations between economy and ecology are even possible within the fishery sector. They refuted some dominating taboos in the fishing industry. First, they showed the transition towards sustainable fishery practices is possible, without economic destruction of the sector. Secondly, these sustainable fishing methods are even able to increase economic profits, and third, they proved that partnerships between fishermen and eNGOs are possible. However, it should be noted that the Ekofish Group example is still an exception to the general rule. Most conservative fishermen hold on tight to their traditional fishing methods. But a trend is witnessed wherein the younger generation fishermen is more supportive towards innovations in the sector (Interview 10, 2015).



## **The Economy and Ecology discourse**

The discussion of BWN- and MFSU initiatives, have provided some interesting results about the Ecology and Economy discourse, in relation to North Sea protection.

First and foremost, these initiatives have shown a broad range of opportunities for North Sea protection. Key element is the integration between ecological, economic and social activities and values. In the current political climate this integration seems to be a crucial to gain political support for the protection of the North Sea ecosystem. Furthermore the initiatives indicate a trend in which smart design, technology and innovation are leading concepts. This trend is confirmed and supported by the Dutch government: *“stimulating new businesses, marine cultivation, introducing (artificial) reef structures; the governmental vision on the North Sea especially promotes combinations of marine functions and values. Ultimately, the North Sea can and must be used in a smarter, logic and effective way than is currently the case, in which out-of-the-box ideas and innovative techniques can play an important role”* (Interview 1, 2015).

Besides broadening the perspectives on the design possibilities of North Sea ecosystem protection, additionally the Ecology and Economy discourse broadened the perspectives on stakeholder interactions and collaborations. The initiatives under the BWN and MFSU approaches have indicated an integration between stakeholders with scientific, governmental, ecological, economic and social-cultural backgrounds. Protected area management on the Dutch North Sea is no longer an issue discussed within the isolated arena of governments, eNGOs and fishery. It is an integrated topic within all the North Sea interests and activities, enlarging the stakeholder arena with representatives from a broad range of other North Sea domains. Instead of fighting over conflicting interests, the stakeholders collaborate in networks where they merge their values and interests. State, market and civil society inevitably cooperate in ad-hoc partnerships for the exploration of opportunities for a healthy and productive North Sea on the long term.

Last, the discourse indicates a changing role for governments in the steering of North Sea protected area policies. Policies remain top-down coordinated and governments keep their authority as ultimate decision-maker, but in a less rigid and demanding fashion than is the case with Natura 2000 policies. They promote the development of bottom-up and market-based initiatives, and provide space for out-of-the-box proposals, self-steering, and private- or public-private partnerships. In doing so, the government aspires a more facilitating instead of initiating role. This means they aim to support promising BWN or MFSU initiatives, by providing licenses, advise stakeholders on jurisdictional procedures or discuss green deals – an agreement between private parties and the government to remove constraints for the execution of sustainable North Sea initiatives (Interview 1, 2015). With policy agenda's such as the North Sea 2050 Spatial Agenda, the government is more explicit on their long term vision and contribution in achieving this vision.

## 8. Connecting the dots: New initiatives versus Natura 2000

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The discussed upcoming North Sea discourses, have generated some valuable new insight for the protection and improvement of North Sea ecological values. Final point of discussion is to evaluate the extent to which these initiatives are supported or in conflict with current Natura 2000 MPA policies. Can they serve as a new MPA policy arrangement, that is capable to improve the effectiveness of North Sea MPA policies, and steer away from current dominant paper park policies? In this regard, the discourses provide some interesting opportunities, but are also confronted with several important drawbacks and challenges.

A crucial result of the North Sea Broad and Economy and Ecology Discourses, is the transition from a sectoral towards an integrated perspective for the protection of North Sea ecological values. Both discourses emphasize a North Sea broad view and the integration between ecological, economic and social North Sea activities and values. Instead of the designated MPA, the entire North Sea is the arena for stakeholder negotiations. Moreover, this stakeholder arena is no longer dominated by an isolated coalition between governments, eNGOs and fishery. A wide range of stakeholders enter the arena, ensuring a comprehensive representation of all the North Sea users and interested parties. This wider stakeholder arena generates new interactions that are future oriented, and focus on collaboration and joint exploration of North Sea opportunities. This is a large contradiction to the conflicting interests and delaying power struggles that mark Natura 2000 interactions. In these stakeholder arenas knowledge is no longer a delaying resource of power, but used to move discussions forward. New technologies and insights are used to explore innovative ways to improve the overall health and productivity of the North Sea.

Moreover, the alternative discourses have been able to widen the perspective on North Sea protected area management. Natura 2000 holds a narrow perspective on the concept of a Marine Protected Area: they are demarcated North Sea areas, which are preferred to be fully closed for other North Sea activities in order to stimulate the conservation and recovery of species and habitats. The ecological prosperity of full-closure MPAs has indeed been confirmed by scientific studies and global practices. However, on a crowded area as the North Sea, that is confronted with many conflicting stakeholder interest, the reservation of closed areas solely to improve North Sea ecological values seems to be a difficult arrangement. Prevailing conflicting interests between eNGOs and the fishery sector and the lack of economic-political support for the MPA management measures result in disappointing and little ambitious outcomes. The heavily negotiated agreements take years, to finally come up with a weak, 'postmark' compromise no one is satisfied with and of which it is highly questionable if the MPA can deliver its promised ecological effects.

On the contrary, initiatives discussed under the upcoming BWN and MFSU policy approaches show the empowerment of North Sea stakeholders to actually contribute to a healthier and productive North Sea. Instead of top-down organised, rigid and demanding structures, bottom-up and market-based initiatives that combine ecology, economy and even social-cultural domains are stimulated. Here, state, market and civil society inevitably cooperate in the steering and shaping of a healthier North Sea ecosystem, while taking into account the overall sustainable development of social-economic North Sea activities. Collaboration occurs on an ad-hoc basis, for which new policy instruments such as private- or public-private

network arrangements and self-regulation are used. To ensure an integrative and sustainable North Sea design, the government promotes stakeholder participation from step zero on by facilitating the implementation of promising stakeholder proposals that fit within BWN or MFSU approaches. Thereby, approaches such as BWN and MFSU have shown to generate a broad range of promising initiatives, that not only protect and improve the North Sea ecology, but are also largely supported by science, governments, eNGOs, market parties and civil society. The implementation of the EU MSFD provides a marine policy framework from the perspective and potential of the sea. Its holistic and comprehensive approach to North Sea management, ensures a jurisdictional framework under which a large amount of BWN or MFSU initiatives find a legal basis for implementation.

Indicated as an important reason for the prevalence of North Sea MPA paper park policies, is the dominating focus of Natura 2000 stakeholders on short term economic losses, which collides with the long-term vision of eNGOs for biodiversity recovery. Initiatives such as the Ekofish group and the North Sea farm provide an important argument against this vision. These examples show that Ecological-Economic combinations pay off, both in terms of ecosystem improvement, as economic profits and increased social-cultural experience. Therefore, interesting result of the alternative approaches to North Sea protected area management, is that they bridge the gap between this focus on short term losses and long term benefits. The alternatives are future focused: North Sea stakeholders collaborate in the shaping of projects that are capable to improve the long-term health and productivity of the North Sea, creating profits for the overall ecosystem as well as its users. Some stakeholder respondents even predicted a future vision, in which these alternatives make MPAs in its present form unnecessary. In this future vision, ecological and economic values are fully integrated, creating a North Sea on which all the social and economic use is sustainable and contribute to a healthy and resilient ecosystem.

Most interesting result of the discussed MPA alternatives in relation to Natura 2000 MPAs, is their potential to increase the resilience of the North Sea ecosystem, as well as generating resilient governance structures for implementing these alternatives. A North Sea broad and integrated vision, supports the development of new policy programs for North Sea protected area management. Examples of these are the discussed Marine Strategy Framework Directive, Building with Nature and Multi-Functional Space Use approaches. These new policy strategies support and integrate top-down, market-based and bottom-up governance structures, by exploring and implementing a broad range of diverse initiatives that are capable to protect and improve the ecological values of the North Sea. Stakeholder collaborations between public and private partners, for the joint development of healthy and productive North Sea, generate a shared long-term vision and brings stakeholders together. Thereby these alternative initiatives are capable to remove the sting out of the completely locked Natura 2000 MPA processes and move North Sea protected area discussions further, in a stakeholder arena that is characterized by collaboration and joint opportunities. Against this background, it is expected that the discussed alternatives have great potential to break the dominant Natura 2000 MPA tunnel vision and move beyond its related paper park policies.

However, when discussing these promising results in the light of the PAA some remarks must be made. It still remains a question if the alternatives are supported or in conflict with current dominant Natura 2000 policies. Even as the question if the alternatives are able to generate change or counterbalance the current stabilized patterns of the Natura 2000 MPA policy arrangement.

Regarding the first question, the discussion of alternative discourses have shown that the proposed initiatives are not in conflict with, but also largely not supportive towards the Natura 2000 MPA policy arrangement.

The North Sea Broad discourse and development of the MSFD seems to be more supportive, than conflicting with Natura 2000. To a greater extent, this discourse underpins current bottlenecks of Natura 2000, for which a North Sea Broad perspective could provide solutions. Having a regional North Sea perspective, enables to diminish the procedural gap between top-down MPA designation rules and bottom-up stakeholder participation on the discussion of MPA management measures, as was discussed in chapter 6.1. It allows the North Sea stakeholders to enter the policy arena from the initial stage of defining locations and borders of North Sea MPAs, instead of entering when these major points are already fixated. Furthermore, finding joint answers to questions as *why is the MPA needed? How should it be designed? and how should it operate?* at this initial stage can be of great benefit for overall stakeholder support for the measure. But, in its core Natura 2000 remains a rigid and demanding legislative framework, that is outdated, conservative and unable to provide a legal basis for alternative approaches or definitions of North Sea protected area management.

In the light of this last remark, the recently implemented MSFD could provide interesting opportunities for supporting the Natura 2000 policy arrangement. The framework is developed from the perspective of the sea, and is able to better respond to the dynamic and complex character of the marine environment; both in terms of policy and ecosystem complexities. Its holistic and comprehensive design, provides a broad range of indicators under which North Sea protection could be achieved. Instead of focusing on individual species and habitats, these indicators ensure an ecosystem approach, resulting in the protection of the overall ecosystem. But in discussing the framework, some challenges and drawbacks already became apparent. Some stakeholders have argued the MSFD to be a 'wolf in sheep clothes'; it merely combines existing marine legal frameworks and guidelines in one overarching Directive, without being explicit about coordination strategies. Thereby, Natura 2000 is still leading for the implementation of North Sea MPAs. Furthermore, the MSFD is a guideline, meaning that the extent to which the framework has an effect, still depends on the ambition of the Dutch government.

The Ecology and Economy discourse is neither supportive or conflictive to the Natura 2000 MPA policy arrangement. Instead, alternative initiatives discussed under the upcoming approaches Building With Nature and Multi-Functional Space Use follow a separate track that can be seen as additional to Natura 2000. Stakeholder respondents indicated that they do not want or think these alternatives (can) replace the Natura 2000 MPA policy arrangement.

First of all, the environmental stakeholders do not want these alternatives to replace Natura 2000 MPAs, because this would indicate that nature conservation would be unconventionally be connected to

economic valuation. With accepting this connection, the eNGOs fear the overall marketization of North Sea ecological values, while it also has an important experiential value (Interview 3, 16, 2015).

Secondly, stakeholder respondents do not think these alternatives can replace the Natura 2000 MPA policy arrangement, because the ecological effect of most of these initiatives will be small. Artificial reefs created by e.g. wind farms, oil- and gas platforms or shipwrecks are ecological pinheads when compared to the overall North Sea. In order to generate a healthy North Sea ecosystem, especially the eNGOs and scientists, but also governmental officials, keep holding on to the importance of large marine areas, that are closed for human activities to generate peaceful recovery of the marine ecosystem. Thereby, the overall ecological impact of the discussed alternatives is still subject of scientific uncertainty and stakeholder discussion. On an individual level, their ecological effects might be local. But from a North Sea Broad and integrative perspective, their cumulative effect might be able to raise the complete North Sea ecosystem, including human usages to a sustainable, healthy and productive level.

When taking a helicopter view, interesting about this line of reasoning, is that it shows the heart of the firm institutionalization of the Natura 2000 MPA policy arrangement, and even global institutionalization of the MPA concept. Striking is that at one side stakeholders claim that there is no panacea or *“one-size-fits-all”* approach to marine conservation (Rossiter, 2014), but on the other side stakeholders are still eager to approach protected area management within the settled definition of a *“reserved marine area that is closed by law to protect the enclosed environment”* (Dudley, 2008: 8). This definition overshadows the part of the same IUCN definition that states the possibility of marine protection by *“other effective means”*; something the discussed bottom-up and market-based innovative initiatives are clear examples of.

Regarding the question if the discussed alternatives can generate change or counterbalance the Natura 2000 MPA policy arrangement, these alternatives must be seen in the context of the PAA. This research has defined a policy arrangement as *“the practical implementation of institutions, expressed in settled rules, interactions and narratives that shape a certain policy”* (see p24). Furthermore, it was stated that a policy arrangement is a temporary stabilization of an institution, which change over time due to the driving forces of agency - bottom-up micro structures, and political modernisation – structural process of social change. In this research, the stabilization of the MPA policy arrangement is challenged by bottom-up and market-based initiatives (the micro structures), promoting alternative and more integrated approaches to North Sea management.

At this point the alternatives discussed under the upcoming *North Sea Broad and Ecology and Economy* discourses are not able to change the firmly established Natura 2000 MPA policy arrangement. The underlying reason can be found in the fact that these alternatives are not institutionalized yet. They are largely ad-hoc and fragmented initiatives, not steered by stabilized patterns, interactions or structures, and constructed on future visions. Furthermore, it is not clear how these alternatives will be coordinated and regulated, because they are not controlled (yet) by a comprehensive and settled framework. The MSFD offers opportunities for coordination, but is still in its development phase and also lacks a clear structure for coordinating its underlying marine policies. Additionally, the discussed initiatives not directly communicated as alternative approach to North Sea protected area management. Initiatives discussed

under Building with Nature and Multi-Functional Space Use approaches offer a smart and innovative perspective on the spatial conflicts of the North Sea, by integrating ecological, economic and social values. Thereby these initiatives are more concepts of marine spatial planning, than being received as direct alternatives to Natura 2000 MPAs.

Altogether, this results in a situation where the promising and innovative alternatives, are simply too fragmented, uncontrolled and non-transparent to shape a firm block for counterbalancing the organised, yet largely ineffective, Natura 2000 MPA policy arrangement.

To finalise this discussion, it should be noted that change in a policy arrangement is not solely induced from these type of bottom-up micro structures, but is also steered by the process of political modernisation. In this context, counterbalancing the ineffectiveness of current Natura 2000 paper park policies on the North Sea, seems to be a matter of time. Based on this research, a larger, structural trend of innovative governance can be witnessed. Here, top-down, rigid and demanding structures for organising marine policies, are replaced by flexible, co-governance structures, wherein states, markets and civil society collaborate in partnerships on the smart and innovative design of an overall healthy and productive North Sea.

## Conclusions & Reflection

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In this final chapter conclusions will be drawn on the research questions of this study. Based on this conclusions a brief reflection will discuss insights and recommendations on the future orientation of MPA policies on the Dutch North Sea.

### Conclusions

This research has aimed to provide an answer to the following twofold research question:

- I. *On which discourse(s) and governance structures are current Dutch policies regarding the implementation of marine protected areas (MPAs) in the Dutch section of the North Sea based and*
- II. *How are alternative stakeholder discourses supported or in conflict with (the) dominant governance structure(s) and discourse(s) regarding marine protected areas in the Dutch section of the North Sea?*

Answer to the first research question has been found by studying the dominant EU Natura 2000 policies for organising MPAs on the Dutch section of the North Sea.

The governance structure of this Natura 2000 MPA policy arrangement is top-down oriented, with bottom-up elements. The top-down character is found in the hierarchical setting for implementing North Sea MPAs. The European Union obliges its Member States to implement Natura 2000 areas within their marine basin, conform the criteria of the Birds- and Habitat Directive. Based on these criteria, the Dutch government in collaboration with scientific institutes selects and designates Birds- and Habitat protected areas, that are placed on the EU list of Community Importance when approved. After formalising its EU obligations, the Dutch government opens the gates for stakeholder participation to negotiate the content and ambition of management measures in the areas. It is in between this phase of MPA designation and implementation of management measures, and the transition from top-down towards bottom-up governance structures where Dutch paper park policies occur: after designation shaping and implementing the management measures is a multi-annual process, resulting in weak compromises showing little ambition.

Crucial inconsistency in the Natura 2000 MPA governance structures is the large procedural gap between the formal and informal rules of the game. Hierarchical, rigid and fixed procedures in an isolated policy arena between government and scientific institutes, are responsible for the designation of Dutch Natura 2000 MPAs. Next the negotiation of management measures - defining the actual protection level within the MPA, is left to a stakeholder arena representing eNGOs and the fishery sector. The highly conflicting interests between these parties, lack of governmental decisiveness and leadership at this phase, missing targets and clear negotiation borders, turn these negotiations in a complex socio-political game of power, where stakeholders strategically use lobby and negotiation to bend and stretch the rules of the game to safeguard their own interests. Important resource used by the stakeholders to influence the policy outcome, is the subjective use of objective knowledge. Here, the stakeholders shop for scientific arguments that are most likely to defend their case and create political support. The exclusion of bottom-up stakeholder participation at step zero of the process, has denied stakeholders the change to start from a common ground, fuelling controversies and conflicts at the final stage of MPA implementation.



The Natura 2000 MPA policy arrangement is characterized by two main discourses. First, from an internal perspective, Dutch MPA policies are controlled and steered by a perspective of Ecology versus Economy. In this discourse, stakeholder conflicts, disunity and power prevail, driving MPA policies away from discussions on conservation targets and turn it into an ordinary game of power in which the right of the strongest determines the policy outcome. Stakeholder conflicts are fuelled by a discrepancy in perspectives on short term losses and long term benefits, in which the short term dominates the current Natura 2000 MPA policy domain. The result is a weak compromise in which small patches of protected zones turn MPA management on the North Sea in an ineffective postmark approach. From an external perspective, the second discourse emphasizes the current sectoral approach to North Sea MPA management. Focus is on the individual site and the protection of individual species and habitats, instead of protecting and supporting the wider ecosystem.

An answer to the second research question has been found by stepping outside the tunnel vision of Natura 2000, and investigating broader perspectives on organising North Sea protected area management.

The exploration of alternative initiatives have showed the occurrence of two new discourses for protecting and improving the ecological values of the North Sea. First, the *North Sea Broad* discourse tackles the current sectoral MPA approach, by emphasizing a regional and integrative approach to protected area management, in which ecological, economic and social interests are combines. Interesting in this domain is the development of the Marine Strategy Framework Directive. This relatively new Directive is regarded as the conscious of the sea, and implements a holistic and broader approach to ocean management: humans are part of the ecosystem and instead of individual species and habitats, it recognises the importance of ecosystem protection.

The second discourse provides an answer for breaking conflicting interests between environmental and economic North Sea stakeholders. In this perspective of *Ecology and Economy*, the North Sea ecosystem and its socio-economic activities are no longer two separated dimensions, but are combined. Here, knowledge is no longer used to fight each other, but to move discussions forward and explore a shared North Sea vision. This vision creates new insights for North Sea protection, from a wider approach and different angles, in which two approaches are leading: *Building with Nature* and *Multi-Functional Space Use*. Both come forth from the limited availability of North Sea space to conduct activities, and the current political climate that favours economic prosperity over nature protection. Crucial for the alternative initiatives discussed under these sub- approaches is the enlarged stakeholder arena, wherein combinations of top-down, bottom-up and market-based governance approaches are used for the establishment of ad-hoc private- and public-private partnerships, that investigate innovative and smart approaches to marine management. The inclusion of stakeholders from step zero of the policy process, empowers the stakeholder to actually contribute to a healthier and productive North Sea, increasing the overall support for the proposed alternatives. Interesting is the role of the Dutch government in this discourse: they remain ultimate decision-maker within North Sea policies, but instead of initiator they take the role of facilitator.

Most interesting result of the investigated alternatives to North Sea protected area management, is their potential to increase the resilience of the North Sea ecosystem, as well as generating resilient governance

structures for implementing these alternatives. Against this background, it is expected that the alternatives have great potential to break the dominant Natura 2000 MPA tunnel vision in the future and move beyond related paper park policies. However, at this point the alternatives are still an additional side track to Natura 2000 MPA policies, and not sufficiently institutionalized in order to form a firm block against the dominating Natura 2000 MPA policy arrangement.

## Reflection

### Research Methods

Time limitations of this research forced to do only a limited amount of stakeholder interviews. Stakeholder respondents were selected from five stakeholder categories: The Dutch government, environmental NGOs, the fishery sector, scientific institutes and stakeholders implementing alternative initiatives. Together, these respondents have been able to generate a comprehensive overview of North Sea MPA policies and have broadened the perspectives on these MPA policies. Additional participation on a North Sea expedition of ten days and presence with a workshop on Building with North Sea Nature, have provided useful insights in stakeholder interactions for shaping MPA policies on the North Sea. Still, it must be noticed that the policy domain entails more stakeholders and interesting alternative initiatives regarding Dutch MPA perspectives. Therefore to increase the representativity of results and conclusions, more stakeholders should be approached.

Secondly, a major part of this research consisted of analysing stakeholder discourses. Inherent to this research method, is the interpretation of opinions and perspectives. By conducting interviews with respondents representing the complete MPA policy arena, it has been aimed to present results as balanced and objective as possible. Still, the risk of biased stakeholder opinions and biased interpretation of these opinions should be taken into account when reading this study.

### The Policy Arrangement Approach

Leading framework for analysing the results of this study has been the Policy Arrangement Approach. The approach has proven to be helpful in answering the research questions and presenting a critical discussion of current dominating Dutch paper park policies and possible alternative MPA approaches for tackling prevailing inefficiencies. However the use of the framework has been proven to be limited in indicating the rise and future opportunities of alternative Dutch MPA approaches. Focus of the framework is on the past and the evaluation of policy occurrence.

Thereby, an important limitation of the framework in this research, is that its most effective application for analysing stability, but particularly change within a policy arrangement, is after the change of the policy arrangement has occurred. For analysing change, the framework is based on the institutionalization of alternative policy arrangement. However, in this research the investigated MPA alternatives for counterbalancing dominant Natura 2000 paper park policies, are still fragmented and uncoordinated. This makes it very difficult to make statements about the potential of these interesting alternatives, to bring solutions and/or improve the effectiveness of current MPA policies.

## Recommendations

To bring this research a step further, it would be interesting to use a theory and/or framework that is future oriented and would be able to make representative statements about the future potential and organisation of MPA alternatives for improving the effectiveness of MPA policies on the Dutch North Sea. Interesting in this regard is the concept innovative governance as used by Arnouts et al. (2012), because this concept explicitly investigates the potential of new forms of governance. Furthermore, when taken into account the discussion of North Sea Broad, Building with Nature and Multi-Functional Space Use, it has become clear that MPA design has the potential to transform towards more integrative approaches of Ecosystem Based Management and Marine Spatial Planning, in which an integrative perspective is taken on the ecological, economic and social dimensions of North Sea management. Therefore, using the analytical frameworks of Ecosystem Based Management and Marine Spatial Planning (see for instance Toonen, 2013) could provide new insights on the potential of the alternative initiatives for generating a resilient future North Sea.

Furthermore, this research has taken a policy focus on the organisation and perspectives of North Sea MPA policies. This has resulted in an overview of interesting alternatives to North Sea protected area management, that are expected to have great potential in generating more resilient governance structures for Dutch MPA policies than is currently the case. However, in ecological terms knowledge gaps exist on the potential of these initiatives to improve the resilience of the North Sea ecosystem. Scientific research in these ecological domains and the monitoring of pilot projects are important steps to be taken to diminish these knowledge gaps.

Finally, for the sake of scoping this research, only the Dutch institutionalization of MPA policies on the North Sea has been investigated. However, in ecological terms this jurisdictional distinction has little meaning, due to the borderless character of the North Sea. Against the background of upcoming approaches to install a North Sea Broad vision, which takes an integrated ecosystem perspective instead of following a sectoral approach, it is highly recommended to lift the policy scope of this research to the same North Sea broad level. It would be interesting to see and discuss the results of this study on the level of the complete North Sea, instead of current fragmented focus on the Dutch section. Therefore it is necessary to study the MPA policy arrangements at the regional EU level, while taking into account the decentralized MPA approaches of the other North Sea Member States.

### Literature

- Aarsen, v. (2015, 16 May 2015). Klaverbank is nog altijd Vogelvrij, *de Volkskrant*, p. 2.
- Abspoel, L. and Vis, J. (2015). *Noordzee 2050 Gebiedsagenda*. Den Haag, the Netherlands: Ministerie van Infrastructuur en Milieu, Ministerie van Economische Zaken.
- Arnouts, R.C.M., Kamphorst, D.A., Arts, B.J.M. and van Tatenhove J.P.M. (2012). Innovatieve governance voor het groene domein. Governance Arrangementen voor vermaatschappelijking van het natuurbeleid en verduurzaming van de koffieketen. (pp. 120). Wageningen: Alterra Wageningen UR.
- Arnouts, R. C. M. (2010). *Regional Nature Governance in the Netherlands: four decades of governance modes and shifts in the Utrechtse Heuvelrug and Midden-Brabant*. (PhD.), Wageningen UR, Wageningen, the Netherlands.
- Arts, B and Buizer, M. (2009). Forests discourses, institutions: A discursive-institutional analysis of global forest governance. *Forest Policy and Economics*, 11(5-6), 340-347
- Arts, B., Leroy, P., and van Tatenhove, J. (2006). Political Modernisation and Policy Arrangements: A Framework for Understanding Environmental Policy Change. *Public Organization Review*, 6(2), 93-106. doi: 10.1007/s11115-006-0001-4
- Arts, B., van Tatenhove, J. and Leroy, P. (2000). Policy Arrangements (Chapter 3). In J. van Tatenhove, Arts, B., Leroy, P. (Ed.), *Political Modernisation and the Environment: The Renewal of Environmental Policy Arrangements* (pp. 53-69). Dordrecht, the Netherlands: Kluwer Academic Publishers.
- Arts, B. and van Tatenhove, J.P.M. (2006). Political Modernisation. In B. Arts, Leroy, P. (Ed.), *Institutional Dynamics in Environmental Governance* (Vol. 47, pp. 21-43). Dordrecht: Springer Netherlands.
- Banks, S.A. and Skilleter, G.A. (2009). Implementing marine reserve networks a comparison of approaches in New South Wales (Australia) and New Zealand. *Marine Policy*, 34, 197-207.
- Chuenpagdee, R., Pascual-Fernández, J.J., Szeliánszky, E., Alegret, J.L., Fraga, J. and Jentoft, S. (2013). Marine protected areas: Re-thinking their inception. *Marine Policy*, 39, 234-240.
- Convention on Biological Diversity (CBD). (2010). *Decisions adopted by the Conference of the Parties to the Convention on Biological Diversity at its Tenth Meeting*. Montreal.
- Council Directive 92/43/EEC on 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (1992).
- Delta Marine Consultants (no date). Guidelines for Xbloc concept design. Gouda.
- Dietz, T., Ostrom, E. and Stern, P.C. (2003). The Struggle to Govern the Commons. *Science*, 302, 1907-1912.
- Dijcks, S. and van den Bemd, E. (2015). Noordzee en Zeeleven: 2-meting Noordzee campagne: GFK.
- Dijkema, S. A. M. (2013). *Voortgang Natura 2000*. 's- Gravenhage: Ministerie van Economisch Zaken.
- Dijkema, S. A. M. (2014). *Bescherming van offshore Natura 2000-gebieden in de Noordzee en start aanwijzingsprocedure mariene Natura 2000-gebieden*. 's-Gravenhage.
- Dotinga, H. and Trouwborst, A. (2009). The Netherlands and the designation of marine protected areas in the North Sea: implementing International and European Law. *Utrecht Law Review*, 5(1), 22.

- Dudley, N. (2008). Guidelines for Applying Protected Area Management Categories (pp. 86). Gland, Switzerland: IUCN.
- European Commission (EC) (1979). *Directive 79/409/EEC of the European Parliament and of the Council on the conservation of wild birds*. Brussels, Belgium: Council of the European Communities.
- European Commission (EC) (1992). Council Directive 92/43/EEC on 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. Brussels, Belgium: Council of the European Communities
- Feeny, D., Berkes, F., McCay, B.J. and Acheson, J.M. (1990). The Tragedy of the Commons: Twenty-Two years later. *Human Ecology*, 18(1), 1-19
- Foley, M. M., Armsby, M.H., Prahl, E.E., Caldwell, M.R., Erickson, A.L., Kittinger, J.N., Crowder, L.B. and Leving, P.S. (2013). Improving Ocean Management through the use of Ecological Principles and Integrated Ecosystem Assessments. *BioScience*, 63(8), 619-631.
- Gleason, M., Fox, E., Ashraft, S., Vasques, J., Whiteman, E., Serpa, P., Saarman, E., Caldwell, M., Frimodig, A., Miller-Henson, M., Kirlin, J., Ota, B., Pope, E., Weber, M. and Wiseman, K. (2013). Designing a network of marine protected areas in California: Achievements, costs, lessons learned and challenges ahead. *Ocean & Coastal Management*, 74, 90-101.
- Hajer, M. A. (1995). *The politics of environmental discourse: ecological modernization and the policy process*. Oxford: Clarendon Press.
- Hardin, G. (1968). The Tragedy of the Commons. *Science*, 162(3859), 1243-1248.
- Hargreaves-Allen, V., Mourato, S. and Milner-Gulland, E.J. (2011). A global evaluation of coral reef management performance: are MPAs producing conservation and socio-economic improvements? *Environmental Management*, 47, 684-700
- Heijkoop, J. (2011). *VIBEG Agreement: fishing within the limits of Nature 2000*. Paper presented at the VIBEG, Goeroe, Overflakkee.
- ICES. (2011). Fisheries Measures in Protected Areas (FIMPAS) within the Exclusive Economic Zone (EEZ) of the Dutch part of the North Sea: areas outside the 12 nautical miles zone: Proposals (pp. 35). Copenhagen, Denmark.
- IDON. (2015, December 2015). Integraal Beheer Noordzee Nieuwsbrief.
- IJlstra, T. (2010). MPA Perspective: International Challenges for the Establishment of MPAs in the Dutch North Sea. *MPA News. International News and Analysis on Marine Protected Areas*, 11, 8.
- Jak, R. G., Bos, O.G., Witbaard, R. and Lindeboom, H.J. (2009). Instandhoudingsdoelen Natura-2000 gebieden Noordzee (pp. 177). Wageningen: Imares Wageningen UR.
- Jones, P. J. S. (2014). *Governing Marine Protected Areas: Resilience through diversity*. London, UK, New York, US: Routledge Taylor and Francis Group.
- Jones, P. J. S., Qiu, W. and de Santo, E.M. (2011). Governing Marine Protected Areas - Getting the Balance Right. Technical Report. In U. N. E. P. (UNEP) (Ed.). Nairobi, Kenya.
- Jones, P. J. S., de Santo, E.M., Qiu, W. and Vestergaard, O. (2013a). Introduction: An empirical framework for deconstructing the realities of governing marine protected areas. *Marine Policy*, 41, 1-4.
- Jones, P. J. S., Qiu, W. and de Santo, E.M. (2013b). Governing Marine Protected Areas: Social-ecological resilience through institutional diversity. *Marine Policy*, 41, 5-13.

- Kersbergen, K. and van Waarden, F.V. (2004). "Governance" as a bridge between disciplines: cross-disciplinary inspiration regarding shifts in governance and problems of governability, accountability and legitimacy. *European Journal of Political Research*, 43, 143-171.
- Kooiman, J. (2003). *Governing as Governance*. London: Sage.
- Kumar, R. (2014). *Research Methodology: a Step-By-Step Guide for beginners*. London, UK: SAGE Publications Ltd.
- Lengkeek, W. and Bouma, S. (2011). Een beschermde status voor wrakken in de Noordzee? Culemborg: Bureau Waardenburg.
- Liefferink, D. (2006). The Dynamics of Policy Arrangements: Turning Round the Tetrahedron. In B. Arts, Leroy, P. (Ed.), *Institutional Dynamics in Environmental Governance* (Vol. 47, pp. 45-67). Dordrecht: Springer Netherlands.
- Lindeboom, H., Geurts van Kessel, J. and Berkenbosch, L. (2005). Gebieden met bijzondere ecologische waarde op het Nederlands Continentaal Plat. Den Haag, Wageningen: RIKZ, Alterra.
- Lindeboom, H. J., Witbaard, R. Bos, O.G. and Meesters, H.W.G. (2008). Gebiedsbescherming Noordzee. Habitattypen, instandhoudingsdoelen en beheersmaatregelen (Vol. WOt- werkdokument 114, pp. 33). Wageningen: Wettelijke Onderzoekstaken Natuur & Milieu.
- Lutchman, I. and Scherr, S.J. (2008). *Marine Protected Areas in Europe and the United States*. Institute for European Environmental Policy, Natural Resources Defense Council, Brussels: Belgium, Washington DC: USA
- McClanahan, T.R., Graham, N.A.J., Calnan, J.M. and MacNeil, M.A. (2007). Toward pristine biomass: reef fish recovery in coral reef marine protected areas in Kenya. *Ecological Applications*, 17, 1055-1067.
- Ministry of Economic Affairs (EA) (2008). *Besluit Natura-2000 gebied Voordelta*. 's-Gravenhage: Staatscourant.
- Ministry of Economic Affairs (EA) (2009). *Besluit Natura-2000 gebied Noordzeekustzone*. 's-Gravenhage: Staatscourant.
- Ministry of Economic Affairs (EA) (2011). *Besluit Natura-2000 gebied Vlakte van de Raan*. 's-Gravenhage: Staatscourant.
- Ministry of Economic Affairs (EA) and Ministry of Infrastructure and Environment (I&E) (2014a). beleidsnota Noordzee 2016-2021 (pp. 100). Den Haag: Rijksoverheid.
- Ministry of Economic Affairs (EA) and Ministry of Infrastructure and Environment (I&E) (2014b). Mariene Strategie voor het Nederlandse deel van de Noordzee 2012-2020 (deel 3) - ontwerp. The Hague: Rijksoverheid.
- Molloy, B. (no date). Case Study: Brent Spar. Aberdeen, UK: Fisheries Research Services, FRS Marine Laboratory.
- Noordzeeloket (2011). Integraal Beheerplan Noordzee 2015. Herziening. (pp. 101). Den Haag: Ministerie van Infrastructuur en Milieu, Ministerie van Defensie, Ministerie van Economische Zaken, Rijkswaterstaat.
- Nyström, M., Folke, C. and Moberg, F. (2000). Coral Reef Disturbance and Resilience in a human-dominated Environment. *Trends in ecology and evolution*, 15, 413-417.



- O'Brian, M. (1998). *Update on the Habitats Directive and its implementation in marine and coastal areas*. Paper presented at the Implementing the Habitats Directive in marine and coastal areas. Proceedings of a seminar held at Morecambe Bay, England 22-24 June 1997, Luxembourg.
- Olsen, E. M., Johnson, D., Weaver, P., Goñi, R., Ribeiro, M.C., Rabaut, M., Macpherson, E., Pelletier, D., Fonseca, L., Katsanevakis, S. and Zaharia, T. (2013). Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities. In K. E. Larkin, McDonough, N. (Ed.), *Marine Board Position Paper* (Vol. 18). Ostend, Belgium: European Marine Board.
- Ostrom, E., Burger, J., Field, C.B., Norgaard, R.B. and Policansky, D. (1999). Revisiting the Commons: Local Lessons, Global Challenges. *Science*, 284, 278-282.
- Pierre, J. (2000). *Debating Governance: Authority, Steering, and Decomocracy*. Oxford: Oxford University Press.
- Pierre, J. and Peters, B.G. (2005). *Governing Complex Societies: Trajectories and Scenarios*. Basingstoke: Palgrave Macmillan.
- Pomeroy, R.S., Parks, J.E. and Watson, L.M. (2004). *How is your MPA doing? A guidebook of natural and social indicators for evaluating marine protected area management effectiveness*. IUCN: Gland, Switzerland
- Raakjaer, J., van Leeuwen, J. and van Tatenhove, J., Hadjimichael, M. (2014). Ecosystem-based marine management in European regional seas calls for nested governance structures and coordination - A policy brief. *Marine Policy*, 1-9.
- Reedijk, B. (2015) *Workshop Building with Nature*. Scheveningen, the Hague.
- Rife, A. N., Erisman, B., Sanchez, A. and Aburto-Oropeza, O. (2013). When good intentions are not enough...Insights on networks of "paper park" marine protected areas. *Conservation Letters*, 6, 200-212.
- Rossiter, J. S. and Levine, A. (2014). What makes a "successful" marine protected area? The unique context of Hawaii's fish replenishment areas. *Marine Policy*, 44, 196-203.
- Smith, J. L., Lewis, K. and Laughren, J. (2006). A Policy and Planning Framework for Marine Protected Area Networks in Canada's Oceans. In W. Canada (Ed.). Toronto Canada: WWF.
- Staatscourant (2014). Inspreek op drie mariene ontwerpaanwijzingsbesluiten Natura 2000, Ministerie van Economische Zaken.
- Toonen, H. (2013). *Sea@Shore. Informational Governance in marine spatial conflicts at the North Sea*. (PhD.), Wageningen UR, Wageningen, the Netherlands.
- Toropova, C., Meliane, I., Laffoley, D., Matthews, E. and Spalding, M. (2010). Global Ocean Protection: Present Status and Future Possibilities (pp. 96). Brest, France; Gland, Switzerland; Washington DC and New York, USA; IUCN WCPA, Cambridge, UK; UNEP-WCMC, Arlington, USA; Arlington, USA; TNC, Tokyo, Japan; UNU, New York, USA.: IUCN.
- Treib, O., Bähr, H. and Falkner, G. (2007). Modes of Governance: towards a conceptual clarification. *Journal of European Public Policy*, 14(1), 1-20.
- van Kersbergen, C. and van Waarden, F. (2001). Shifts in governance: problems of legitimacy and accountability. Den Haag: NWO.

- van Leeuwen, J. and van Tatenhove, J. (2010). The Triangle of Marine Governance in the Environmental Governance of Dutch Offshore Platforms. *Marine Policy*, 34, 590-597.
- van Leeuwen, J., Raakjaer, J., van Hoof, L., van Tatenhove, J., Long, R. and Ounanian, K. (2014). Implementing the Marine Strategy Framework Directive: A policy perspective on regulatory, institutional and stakeholder impediments to effective implementation. *Marine Policy*, 1-6.
- van Tatenhove, J., Arts, B. and Leroy, P. (2000a). Political Modernisation. In J. van Tatenhove, Arts, B., Leroy, P. (Ed.), *Political Modernisation and the Environment: The Renewal of Environmental Policy Arrangements* (pp. 35-51). Dordrecht, the Netherlands: Kluwer Academic Publishers.
- van Tatenhove, J., Arts, B. and Leroy, P. (2000b). *Political Modernisation and the Environment: The Renewal of Environmental Policy Arrangements*. Dordrecht, the Netherlands: Kluwer Academic Publishers.
- Weijerman, M., Lindeboom, H. and Zuur, A.F. (2005). Regime shifts in marine ecosystems of the North Sea and Wadden Sea. *Marine Ecology Progress Series*, 298, 21-39.
- Wester, F. P. J. and Peters, V.A.M. (2004). *Kwalitatieve analyse: uitgangspunten en procedures*. Bussum, the Netherlands: Coutinho.

## Webpages

- Bos, O. (2015). Expeditie Borkumse Stenen: oase van biodiversiteit. Retrieved 14-06-2015, from <http://www.noordzee.nl/expeditie-borkumse-stenen-oase-van-biodiversiteit/>
- Convention on Biological Diversity (CBD). (No Date). What is Marine and Coastal Biodiversity? Retrieved 13-05-2015, from <https://www.cbd.int/marine/intro.shtml>
- European Commission (EC) (2016). Natura 2000 in the Marine Environment. Retrieved 01-12-2015, from [http://ec.europa.eu/environment/nature/natura2000/marine/index\\_en.htm](http://ec.europa.eu/environment/nature/natura2000/marine/index_en.htm)
- Lindeboom, H. (2015). Hoe kan er zo'n rijk onderwater leven verstopt zitten in onze grauwe Noordzee. *De Noordzee*. Retrieved 07-10-2015, 2015, from <https://www.youtube.com/watch?v=XD-NUHu8LAs&list=PLZ0df6wQ5oO-hQsihYyyk26Jpd55pkMJG>
- Ministry of Economic Affairs (EA) (No Date a). Natura-2000 gebieden per provincie. Retrieved 18-01-2016, from <http://www.synbiosys.alterra.nl/natura2000/gebiedendatabase.aspx?subj=n2k&groep=0>
- Ministry of Economic Affairs (EA) (No Date b). Natura 2000 gebieden Noordzee Kustzone. Retrieved 28-06-2015, from <http://www.synbiosys.alterra.nl/natura2000/gebiedendatabase.aspx?subj=n2k&groep=1&id=n2k7&topic=doelstelling>
- NASA. (1972). Blue Marble - Image of the Earth from Apollo 17. Retrieved 13-05-2015 2015, from <https://www.nasa.gov/content/blue-marble-image-of-the-earth-from-apollo-17>
- Natura 2000 (2016). Voortgang Natura 2000. Retrieved 14-01-2016, from <http://www.natura2000.nl/pages/kaartpagina.aspx>
- Nederlandse Visserijbond (2015). VIBEG Partijen bereiken overeenstemming op hoofdlijnen over voorzetting samenwerking. Retrieved 20-01-2016, from <http://www.vissersbond.nl/vibeg-partijen-bereiken-overeenstemming-op-hoofdlijnen-over-voorzetting-samenwerking/>

Noordzeeloket. (No Date a). Noordzee Natura 2000 Gebieden. Retrieved 14-12-2015, from <https://www.noordzeeloket.nl/Beleid/noordzee-natura-2000/gebieden/>

Noordzeeloket. (No Date c). Interdepartementaal Directeuren overleg Noordzee (IDON). Retrieved 07-03-2016, from <https://www.noordzeeloket.nl/IDON.aspx>

Noordzeeloket. (No Date d). Shipwrecks on the North Sea. Retrieved 16-07-2016, from <https://www.noordzeeloket.nl/Beheer/noordzee-atlas/gebruik/wrakken.aspx>

North Sea Atlas. (no date). Bestuurlijke en Juridische grenzen Nederlands Continentaal Plat. Retrieved 29-03-2016, from <https://www.noordzeeloket.nl/Beheer/noordzee-atlas/beleid-en-beheer/>

Reuchlin-Hughenoltz, E. (2015). Expeditie Borkumer Stenen: Great Borkumer Reef. Retrieved 14-06-2015, from <http://www.noordzee.nl/expeditie-borkumse-stenen-great-borkumer-reef/>

### **Interviews and observations**

**Interview 1**, Rijkswaterstaat, Waldo Broeksma, 02-06-2015

**Interview 2**, IMARES, Joop Coolen, 03-06-2015

**Interview 3**, IMARES, Oscar Bos, 03-06-2015

**Interview 4**, IMARES, Han Lindeboom, 03-06-2015

**Interview 5**, NOGEPA, Aart Tacoma, 18-06-2015

**Interview 6**, North Sea Foundation, Thomas Rammelt, 18-06-2015

**Interview 7**, Marine Stewardship Council/Ministry of Economic Affairs, Hans Nieuwenhuis, 18-06-2015

**Interview 8**, North Sea Farm, Koen van Swam, 22-06-2015

**Interview 9**, Nederlandse Visserijbond, Durk van Tuinen, 24-06-2015

**Interview 10**, VisNed, Pim Visser, 30-06-2015

**Interview 11**, Ministry of Economic Affairs and Ministry of Infrastructure and Environment, Vincent van der Meij, Bas Weenink and Caroline van Heurn, 30-06-2015

**Interview 12**, Bureau Waardenburg, Wouter Lengkeek, 13-08-2015

**Interview 13**, Greenpeace, Frederieke Vlek, 18-08-2015

**Interview 14**, LiNSI/eco-effective, Anne-Mette Jorgensen, 20-08-2015

**Interview 15**, Ekofish group, Louwe de Boer, 24-08-2015

**Interview 16**, WWF, Emilie Reuchlin-Hughenoltz, 27-08-2015

**Interview 17**, Stichting Duik de Noordzee Schoon, Ben Stiefelhagen & Klaudie Bartelink, 13-09-2015

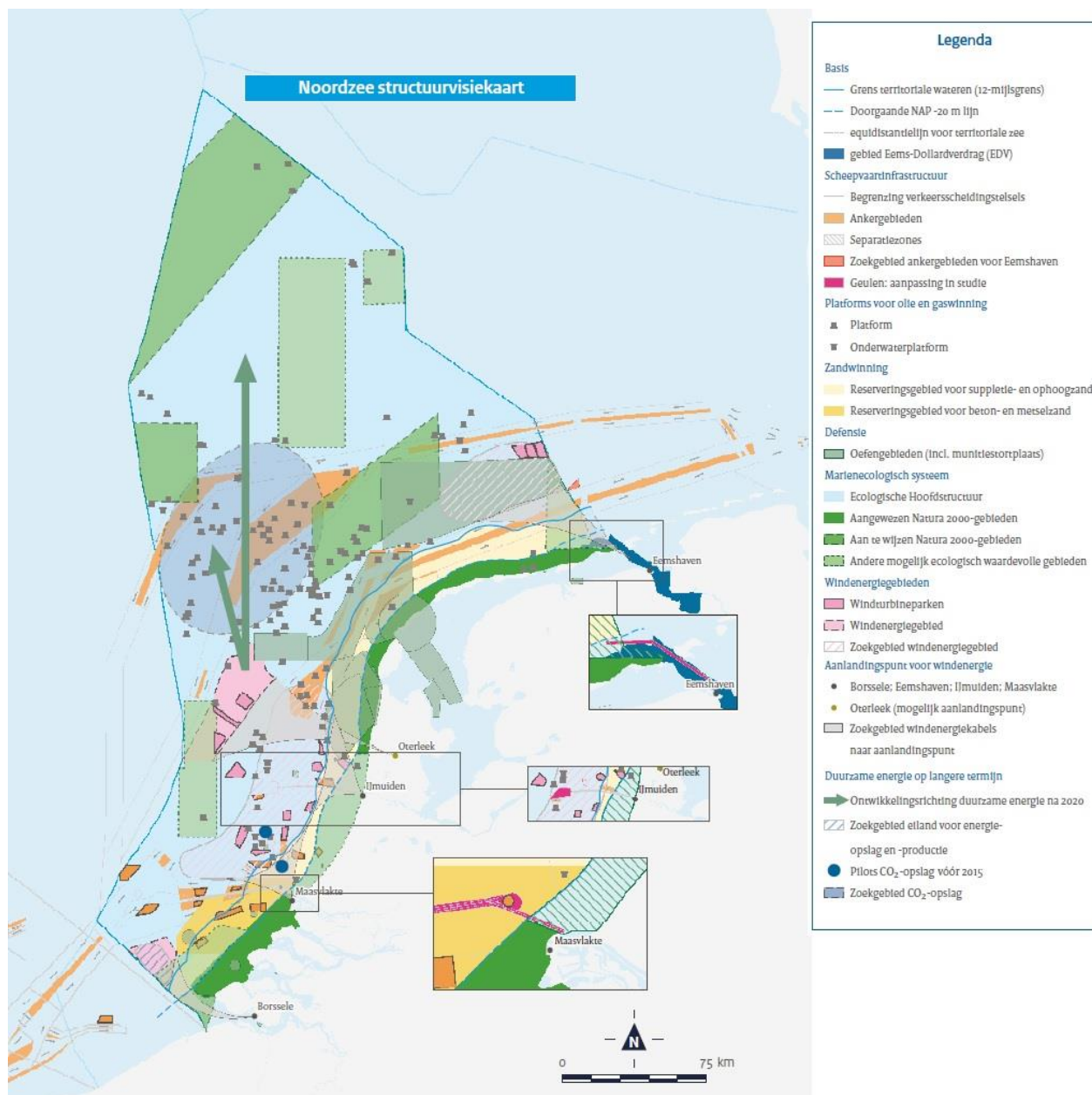
**Expedition Dogger Bank** 2015, Duik de Noordzee Schoon, 04-09-2015 – 14-09-2015

**Building with Nature** (2015). Workshop Building with North Sea Nature, 23-06-2015, Visafslag, Scheveningen

## Appendices

### Annex 1 – North Sea use and functions

#### 1.1 Spatial division Dutch North Sea functions and their spatial use in km<sup>2</sup>



**Figure 16:** Graphical overview of all the nature, economic and social activities on the Dutch North Sea, including their spatial claims (Noordzeelok et, 2011: 18-19)

## 1.2 Spatial division Dutch North Sea functions in numbers

### Feitelijk ruimtegebruik op het Nederlandse deel van de Noordzee

Gebruiksfunctie		Aantallen	Ruimtegebruik in km <sup>2</sup>	
Olie- en gaswinning		161 platforms	126	
Commerciële oppervlaktedelfstofwinning		13 mln m <sup>3</sup> /jr	60-90	in 5 jaar
Kustsuppletie zandwinnig		12 mln m <sup>3</sup> /jr		
Baggerstortlocaties		6	37	
Kabels (in gebruik)		3300 km	3300	
Leidingen		4500 km	4500	
Scheepvaartroutes			3600	
Militaire oefengebieden		5	4200	
Windenergie	Gerealiseerd	228 MW	43	bij 6 MW/km <sup>2</sup>
	In aanbouw	730 MW	125	
	Gepland	3450 MW	575	
Natuur	Voordelta		924	
	Vlakte van de Raan		175	
	Noordzeekustzone		1445	
	Doggersbank		4715	
	Friese Front		2880	
	Klaverbank		1235	
Visserij			EEZ en territoriale zee minus gesloten gebieden voor natuur en energie	
Nederlandse deel Noordzee			58000	

Table 4: North Sea User functions divided in sectors, amount and spatial use in km<sup>2</sup> (Ministry of EA, 2014: 20)

## Annex II – North Sea socio-economic use impact table

### Impact table of socio-economic use of the North Sea on biodiversity values within important ecological areas

	Doggersbank	Klaverbank	Centrale Oestergronden	Friese Front	Kustzee	Borkumse Stenen	Zeeuwse Banken	
Waarden								
Bodem fauna			o.a. Noordkromp	o.a. Noordkromp			?	
Vogels				Zeehoof Grote Jager	Diverse soorten			
Vissen	Stekelrog							
Zeezoog-dieren								
Impacts								
Huidige situatie	Visserij	Visserij	Visserij	Visserij	Visserij	Visserij (Scholbox)	Visserij	
			Scheepvaart	Scheepvaart	Scheepvaart	Scheepvaart	Scheepvaart	
				Olie- en gas	Wind	Zandwinning	Zandwinning	
				Defensie	Schelpen	Defensie		
					Baggerstort			
					Zandsuppleties			
Nieuwe activiteiten	Olie/gas	Olie/gas	Olie/gas	Olie/gas	Olie/gas	?	?	
	Kabel		Kabel		Kabels	?	?	
		Zandwinning			Schelpdierkweek			
					Landaanwinning			
Nieuwe act.met uitstr.eff.					Windparken		Diepe zandwinning	
					Diepe zandwinning			

Rood = sterk negatief

Roze = aanzienlijk negatief

Geel = beperkt negatief

Blauw = marginaal negatief

Grijs = positief dan wel negatief

Wit = impact niet relevant

Wit en ? = onvoldoende informatie beschikbaar

Table 5: (Lindeboom et al., 2005: 68)

## Annex III – IUCN MPA categories

<b>Ia Strict Nature Reserve</b>	Strictly protected for biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values.
<b>Ib Wilderness Area</b>	Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition.
<b>II National park</b>	Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.
<b>III Natural monument or feature</b>	Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove.
<b>IV Habitat/species management area</b>	Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category.
<b>V Protected landscape or seascape</b>	Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.
<b>VI Protected areas with sustainable use of natural resources</b>	Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

**Table 6:** Overview of IUCN MPA categories (Dudley, 2008: 8).



Annex IV – shipwrecks artificial reefs  
North Sea map shipwrecks



Figure 17: shipwreck locations North Sea (Noordzeeloket, No Date d)