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03.THE
INTERPLAY
BETWEEN
KNOWLEDGE AND
GOVERNANCE:
INSIGHTS
FROM THE
GOVERNANCE OF
RECREATIONAL
BOATING IN THE
DUTCH WADDEN
SEA AREA,
1981–2014

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Abstract

Through shifts towards interactive and participatory forms of environmental governance, knowledge dynamics may come into play that differ from those of traditional forms of policy-making. This paper investigates how shifts of environmental governance and knowledge are related. In order to do so, it reconstructs the development of the governance of recreational boating in the Dutch Wadden Sea on the empirical basis of interviews, document analysis, and a focus group. Moreover, it analyzes this development by means of an analytical framework that combines governance arrangements, knowledge systems and knowledge-governance interfaces. Our results show that in the last decades partly an accumulation and partly a sequence of various governance arrangements concerning recreational boating occurred; this entailed a shift from predominantly centralized governance to a combination of governance modes with a stronger emphasis on decentralized, interactive and self-governance. This shift occurred together with an increasing prominence of qualitative local knowledge, stakeholders' knowledge, and the integration of various forms of knowledge. Furthermore, a shift occurred towards more participatory knowledge-governance interfaces. Our analysis suggests that environmental governance and knowledge are interconnected in various ways: the regulatory and epistemic aspects of environmental issues are bound up with each other, and governance and knowledge are coproduced and mutually constitutive. Key lessons from this analysis are that room for experimentation is an important factor in improving environmental governance, and that increasing stakeholder involvement in governance implies that new modes of jointly creating and exchanging knowledge may need to be taken into account.

3.1 INTRODUCTION

Many nature areas worldwide are the scenes of conflicts over the use, accessibility, and protection of nature. Both scholarly debates and environmental management and policy practices reflect a shifting paradigm regarding the resolution of such conflicts. This shifting paradigm can be summarized as the emergence of environmental governance. The literature on environmental governance is heterogeneous and comprises various definitions and scholarly perspectives (Tacconi, 2011). In this paper, the term environmental governance signifies the measures, institutions and processes of collective decision-making that are deployed to protect the environment and resolve conflicts over natural resources (Paavola, 2007; Tacconi, 2011; Driessen et al., 2012).

The emergence of environmental governance implies a “dispersion and displacement of politics” in multiple ways (Buizer, 2008: 11). Firstly, environmental governance arrangements usually include a plurality of societal

actors in a participative or deliberative manner (Wallington et al., 2008; Klinke, 2012; Bixler, 2014). As a consequence, power, competences, and responsibilities are redistributed among the actors involved (Berkes, 2010; Lockwood et al., 2010). Secondly, environmental governance often takes place in a variety of political arenas and levels beyond the boundaries of the traditional governmental institutions of the nation-state (Buizer et al., 2011; Compas, 2012).

In the context of environmental governance, knowledge dynamics may come into play that differ from those of traditional forms of policy-making. For instance, such knowledge dynamics include the increased critical scrutiny of the role of science in decision-making and the broadening of the notion of expertise (Bäckstrand, 2004). The latter entails a more pluralistic view on the various forms of scientific and other knowledge, such as local and traditional knowledge, that may be relevant to decision-making (Ellis, 2005; Birkenholtz, 2008). This theme has for instance received scholarly attention in governance studies that focus on participatory forms of nature conservation and management (Berkes, 2004; King, 2004; Robinson and Wallington, 2012). Moreover, collaborative knowledge creation and the integration of various forms of knowledge are described as key knowledge processes that may enhance the legitimacy of environmental governance practices (Cash et al., 2003; Bohensky & Maru, 2011; Hegger et al., 2012; Robinson & Wallington, 2012). Finally, research in the fields of adaptive governance and adaptive co-management has shown that learning is instrumental in productively dealing with complex environmental issues (Armitage et al., 2008; Crona & Parker, 2012; Baird et al., 2014).

Thus, we can infer from the literature that modes of governance may be related to modes of creating and exchanging knowledge. Consequently, we may expect that particular governance shifts are related to particular knowledge shifts. Despite the growing body of literature on the role of knowledge in governance (e.g., Bäckstrand, 2004; Van Buuren, 2009; Evans, 2010; Bremer & Glavovic, 2013a), the relation between shifts of governance and shifts of knowledge has received little attention. This paper aims to contribute to insight into this relation through a longitudinal study of the governance of recreational boating in the Dutch Wadden Sea (1981-2014). The research question we will address in this paper is: how have modes of governance and modes of knowledge creation and exchange concerning recreational boating changed through the years, and what insights does this provide on the interrelation between shifts of governance and knowledge?

The next section describes the framework employed to analyze the case. Section 3.3 outlines the methodology, after which section 3.4 introduces

the main issues and actors that have played a role in the case. Subsequently, section 3.5 describes the empirical results. Finally, section 3.6 discusses the results and draws conclusions on the interplay between knowledge and governance in a context of change.

3.2 ANALYTICAL FRAMEWORK: GOVERNANCE MODES, KNOWLEDGE SYSTEMS AND INTERFACES

In order to analyze shifts of governance, we use the framework of governance modes that has been developed by Driessen et al. (2012). According to these authors, the “large number of conceptual labels” that have emerged in the broad and heterogeneous governance literature “have contributed to confusion, rather than to order and clarity” (Driessen et al., 2012: 145). In order to contribute to clarity in the study of shifts of governance, they have developed a typology of governance modes that “helps to meaningfully differentiate between various governance arrangements” (Driessen et al., 2012: 145). A governance arrangement is the ensemble of the content and organization (i.e., actor configurations and institutional features) of a specific governance domain (Arts et al., 2006; Driessen et al., 2012). The value of this typology is that it helps to analyze *how* modes of governance shift from one to the other by means of classifying successive governance arrangements. The typology in itself does not provide clear clues as to *why* modes of governance shift; however, this is not problematic in the context of this paper as we are mainly interested in the how-question.

In the first two modes of governance that the typology distinguishes, governmental actors “take the lead”; “the market and civil society are the recipients of the government’s incentives” (Driessen et al., 2012: 145). If national governmental actors are the main protagonists, this is called *centralized governance*; we speak of *decentralized governance* when regional or local governments are in the lead. The third mode is *public-private governance*; in this case, joint efforts and collaborations occur “mainly between government and market actors” (Driessen et al., 2012: 145). In the fourth mode called *interactive governance* “the actor base is broader and governments, market actors and civil society are collaborating on equal terms” (Driessen et al., 2012: 145). The fifth and final mode is *self-governance* in which “actors from the market and civil society enjoy far-reaching autonomy and are able to initiate new approaches themselves” (Driessen et al., 2012: 148). These five categories are not mutually exclusive; in practice, governance arrangements may combine features of various governance modes.

In order to analyze shifts of knowledge, we identify the ways in which specific governance arrangements were or have been informed. As these ways may vary greatly, we deploy the deliberately open and flexible concept of the “knowledge system” in our analysis. We define a knowledge system as a social system that comprises actors and specific ways of creating and exchanging knowledge (Watson-Verran & Turnbull, 1995; Turnbull, 2000). Knowledge creation may for instance include a wide array of ways ranging from formalized scientific methods to direct personal experience. Moreover, knowledge systems can be characterized by specific forms of knowledge such as local and generic knowledge. Local knowledge pertains to phenomena and circumstances that are highly time- and place-specific; it is “strongly rooted in a particular place” (Geertz, 1983: 75). Generic knowledge pertains to phenomena on larger spatial and /or temporal scales, such as large-scale patterns or statistics; thus, it has a more aggregated character than local knowledge. The term generic does not imply that this form of knowledge transcends all locality; it is constructed in specific places by specific communities of actors and may have different meanings in different local contexts. Our concept of the knowledge system does not impose strict dichotomies between forms of knowledge. Rather, it takes as its point of departure the idea that different knowledges such as local and generic knowledge and expert and lay knowledge co-exist in various configurations (Wynne, 1996). Moreover, this concept privileges neither scientific nor other knowledge systems “in terms of producing true or good knowledge”; it is impartial towards different epistemologies (Watson-Verran & Turnbull, 1995: 136).³⁵

In our analysis, we use the term “interface” to describe how knowledge and governance are connected in the context of specific governance arrangements. Like the concept of the knowledge system, this is a deliberately flexible concept; it denotes the “multitude of ways in which knowledge, in all its forms, is used in support of public decisions” (Bremer & Glavovic, 2013b: 110). It encompasses the processes, institutions, and social relationships between experts, stakeholders and decision-makers that are aimed at connecting or integrating knowledge and governance (Bremer & Glavovic, 2013b: 110). Knowledge-governance interfaces may be science-based, but they may also have a participatory character; in the latter case, actors with various backgrounds and knowledges are “empowered to contribute their perspectives”³⁶ (Bremer & Glavovic, 2013b: 110). Like the categories mentioned above, these two types of interfaces are also not mutually exclusive; they may overlap in practice.

³⁵ Watson-Verran and Turnbull (1995: 136) use the term “symmetry” for this impartiality towards epistemologies.

³⁶ The original quotation marks are deleted.

3.3 METHODS

This paper reconstructs the development of the governance of recreational boating in the Dutch Wadden Sea on the empirical basis of interviews, document analysis, and a focus group. A total of 26 semi-structured interviews were conducted with actors who were actively involved in the governance of recreational boating in the Dutch Wadden Sea. The main issues concerning this case were explored in a first round of 5 interviews in 2012 with representatives of recreational boating organizations. These interviewees were selected after they had presented themselves in response to a call for research participants, which was made at a Wadden Sea symposium in December 2011. In a second round of 21 interviews in 2013 and 2014, a wide variety of actors were interviewed, including representatives of national, provincial and municipal governments, nature conservation NGOs, terrain management organizations, and research organizations. These interviewees were selected because they were actively involved in the governance of recreational boating in the Dutch Wadden Sea, either as representatives of their organizations or networks, or as specialists within their organizations. Because many of the interviewees have been or were involved in various current and former governance arrangements, the interviews allowed for a historical reconstruction of the various conflicts and collaborations between the actors involved. Semi-structured interviews were used because they enabled the in-depth investigation of the concerns and perspectives of the various actors involved, and they allowed for combining theoretically structured and exploratory empirical investigation. The main interview topics included: actors' perspectives on the relation between recreational boating and nature, the collaborations between the actors involved, the role of knowledge in governance, and the main rules and agreements concerning recreational boating and nature conservation. Most of these interviews lasted between 45 and 90 minutes. Furthermore, a focus group with representatives of recreational boating CSOs (civil society organizations) was conducted in order to update and supplement the information that was obtained in the first interview round. The interviews and focus group were recorded, transcribed verbatim, and analyzed in two rounds. In the first round, we analyzed various aspects of the case, including:

- knowledge- and governance-related aspects of the governance arrangements mentioned in the interviews and the focus group;
- the main topics, issues, and developments according to the respondents concerning the governance of recreational boating.

In this first round, we used software for qualitative data analysis (Nvivo 10) and we applied an inductive coding strategy using setting-specific codes that we constructed on the basis of the issues that were brought up by the respondents (Lofland et al., 2006).³⁷ In the second round, we analyzed the various governance arrangements using the analytical framework described in section 3.2. In order to validate our results, we triangulated interview and focus group data with relevant documents, such as legal texts, policy documents, agreements and covenants, and research and evaluation reports.

3.4 RECREATIONAL BOATING IN THE DUTCH WADDEN SEA: MAIN ISSUES AND ACTORS

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The Wadden Sea area is widely recognized as an important nature area with a unique character due to the combination of its location, scale, biodiversity and dynamics. It is a partly intertidal wetland area, bounded by a series of islands and the mainland of The Netherlands, Germany and Denmark. It hosts populations of harbor seals (*Phoca vitulina*) and grey seals (*Halichoerus grypus*) and serves as an important staging area for many migratory birds (Steins, 1999; Piersma & Lindström, 2004).

Since the 1970s, various policies and regulations at both national and international levels of government have been implemented to conserve nature in the Wadden Sea area. These policies and regulations have restricted and altered human activities in the area, including recreational boating, in a variety of ways. In this paper, the term recreational boating denotes the staying on or moving around with a vessel such as a motorboat, sailing boat or canoe for recreational purposes.

In recent decades, the growth of recreational boating on the Wadden Sea area has raised concerns among policy-makers and nature conservationists about its possibly adverse effects on wildlife; the main concern is that recreational boating may cause disturbances of birds and seals (LNV, 2009). In this case, the term disturbance denotes situations in which animals in the wild change their behavior due to the nearness of humans (Smit & Visser, 1993).³⁸ Disturbance may for instance hamper the nursing of seals or the building up of the fat reserves that migratory birds need for their long journeys. The issue of disturbance has been the object of both scientific research and heated debate among policy makers and stakeholder organization in the Netherlands. Research has provided insight in some aspects of the disturbance of seals and birds, such as the distances at which different species of birds fly up when they are approached by sources of

³⁷ A coding summary report is available at the corresponding author.

³⁸ Other definitions also include non-human sources of disturbance (Smit and Visser, 1993). We focus on the relations between human activity and nature conservation; thus, we focus on human sources of disturbance.

disturbance (Spaans et al., 1996; Krijgsveld et al., 2008). However, still much is unknown about disturbance, for instance regarding its effects on bird populations in the Wadden Sea area. This is exemplified by the following quote of one of the interviewed researchers:

“[...] what does it mean for the population in the long run, that is the question. We are continuously confronted with: a direct reaction can be easily measured but what does it mean for the birds?”

Furthermore, recreational boating CSOs (civil society organizations) have through the years challenged conservation measures aimed at preventing disturbances, under the argument that these measures were in some cases poorly motivated and that disturbance is a relatively limited problem that is caused by a small group of culprits. For instance, a representative of one of the CSOs stated:

“Disturbance by water sports enthusiasts exists [...] But relatively speaking, how much influence it has on the conservation of bird species, seals, eelgrass, and other variables on the Wadden, I doubt whether it is that important.”

Thus, disturbance by recreational boating is a relatively “intangible” issue in several respects; it is surrounded by uncertainties, there are conflicting perspectives on how problematic it is, and moreover it is difficult to “micro-manage” as recreational boating is a highly dispersed and individual activity. The governance of recreational boating in the Dutch Wadden Sea is characterized by complex social and administrative conditions with a multitude of actors, collaborations, networks and deliberation platforms. The most actively involved actors can be divided in the following main groups:

- Governmental organizations at the national level have key regulatory tasks and competences regarding nature conservation.³⁹ These tasks and competences include designating closed marine protected areas (MPAs) to protect birds and seals, and executing control and enforcement. Moreover, the Dutch government participates in the trilateral Wadden Sea Cooperation together with the governments of Germany and Denmark.
- Three provincial governments are the competent authorities regarding harbor expansions in the Wadden Sea area under the Dutch nature conservation regulation.⁴⁰ They have an intermediary position between the parties and governmental levels involved and

39 These organizations are notably the departments of Economic Affairs (EA) and Infrastructure and the Environment (I&M). These departments have succeeded the departments of Agriculture, Nature and Food Quality (LNV) and Transport, Public Works and Water Management (V&W).

40 The Provinces of North Holland, Fryslân and Groningen.

have played initiating and coordinating roles in the governance of recreational boating.

· 17 municipal governments, collaborating in two platforms, are primarily involved in the governance of recreational boating for two reasons.⁴¹ Firstly, they aim to safeguard the exploitation, safety and possible expansion of the marinas within their territories.⁴² Secondly, they aim to safeguard the local economic activities that are directly dependent on the accessibility of the Wadden Sea, such as guided seal-watching tours.

· An alliance of civil society organizations (CSOs)⁴³, including water sports associations and sector associations, are the most active representatives of the interests of vacationers who sojourn and sail around in the Wadden Sea area, and of the water sports industry.⁴⁴ They share a set of more or less common values and interests. For instance, these organizations all highly value the ability to move around freely and to enjoy the quiet and natural beauty of the Wadden Sea. For a part of their constituency, beaching and staying on sand flats during low tide is a key element of sailing on the Wadden Sea. Furthermore, these organizations advocate good accessibility and facilities of harbors and good nautic circumstances which enable safe and smooth passages through the area.

· Various non-governmental nature conservation organizations (NGOs) are involved. Three provincial landscape organizations are responsible for the terrain management of a part of the area. In addition, a coalition of five nature conservation NGOs plays an active role in the governance of recreational boating.⁴⁵ These NGOs are involved in nature conservation and restoration in a variety of ways, and two of them are formally terrain managers. They advocate the intensification and improvement of nature management in the Wadden Sea area and they develop initiatives with which they aim to obtain a more structural and executive role in the management of the Wadden Sea.

41 The Association of Wadden Sea Coastal Municipalities and The Wadden Islands Collaborative Association.

42 The interests of the marinas in the Wadden Sea area are also promoted by the Wadden Sea Marinas Foundation.

43 The distinction between CSOs and NGOs is not clear-cut as the former are also non-governmental. We use the term CSOs for the organizations that promote the recreation-related interests of citizens and watersports companies. Moreover, we use the two terms in order to clearly distinguish between these two groups of organizations.

44 These organizations include: the Wad Sailors Association, the Dutch Association of Tour Sailors, the Royal Dutch Touring Club, the Royal Dutch Water Sport Union, the Dutch Trade and Industry Association for Shipbuilding and Water Sports, and the Association for Professional Charter Navigation.

45 The participants in this coalition are: the Society for the Protection of Birds, the Wadden Sea Society, the WAD Foundation, the Society for the Preservation of Nature Monuments in the Netherlands, and Staatsbosbeheer (the Dutch Forestry Commission). The latter is a former governmental agency that has gained a more autonomous status; it is not fully non-governmental but it participates in this otherwise NGO-based coalition.

3.5 RESULTS AND ANALYSIS: SHIFTING GOVERNANCE AND KNOWLEDGE

3.5.1 A genealogy of arrangements

From 1981 onwards, several governance arrangements concerning recreational boating in the Dutch Wadden Sea have emerged, evolved, co-existed, and sometimes vanished. Together, they have constituted the regime that governs recreational boating. In this paper, the term “regime” denotes the informal composition of various interrelated governance arrangements that constitutes a way of governing. This section describes this shifting governance regime in terms of its various arrangements. As several arrangements arose out of others, the history of the regime resembles a genealogy.

3.5.1.1 THE NATURE CONSERVATION ACT: CLOSING AREAS

The Nature Conservation Act provides an important legal framework for nature conservation in the Netherlands. Under this act, the Dutch government can designate specific areas as protected nature areas, or “nature monuments”. The major part of the Wadden Sea has been designated as a State nature monument in two steps that were taken in 1981 and 1993. A key governance instrument regarding recreational boating is provided by Article 20 of this act, which gives competent authorities the possibility of closing specific areas within a protected nature area. In the Wadden Sea, this instrument has been applied by the department of Economic Affairs to close the areas that are the most important for birds and seals. Some of these areas are closed temporarily, for instance during the breeding season or around high tide, others are closed permanently.

The governance arrangement of the Nature Conservation Act has a mainly centralized character as the national government is the initiating and leading actor and the mode of decision-making is predominantly top-down oriented. However, in recent years the arrangement has become somewhat more interactive. In 2009, the department of Agriculture, Nature and Food Quality implemented a guideline for the decision-making procedure concerning the closing of areas (LNV, 2009). The aim of this guideline is to make this procedure more transparent by describing the ecological assessment framework that informs the procedure and by clarifying and formalizing the successive process steps that constitute the consultation- and decision-making cycle. These steps include: formulating new measures based on monitoring by researchers and nature manage-

ment professionals, discussing them in stakeholder and expert groups, and finally enacting and publishing them.

The designation of “Article 20 areas” as a conservation instrument has been strongly contested by CSOs for several reasons, including those mentioned in section 3.4. Moreover, a main point of criticism was that the instrument was too rigid and poorly attuned to the dynamics of the Wadden Sea nature, because the decision-making process took place in a yearly cycle. Recently, the process of closing off areas has been made more flexible and adaptive. A representative of the CSOs stated about the old procedure:

“Where the birds alight changes all the time. [...] The closing-off cycle starts in august and applies during the next year. [...] It is well possible that shoals are closed off where they don't come at all. [...] It should be argued that, if they're not there this year, it can be easily thrown open.”

The knowledge system that informs this governance arrangement has a multifaceted character. Key sources of information include the scientific expertise from research organizations such as IMARES⁴⁶ and SOVON⁴⁷ and the input from nature management professionals of the department of Economic Affairs. These experts notably provide place-specific quantitative knowledge on the occurrence of birds and seals in the area. Furthermore, the knowledge system includes the experiential knowledge of stakeholders such as sailors, who are consulted on the proposed measures. As the process of monitoring, advice, consultation and decision-making takes place in a cycle of adaptive management, the knowledge-governance interface has an adaptive character. Moreover, given the inclusion of both scientific expertise and broad stakeholder consultation, the interface has both a science-based and participatory character.

3.5.1.2 THE 200M-RULE: RESTRICTING BEACHING

Besides the national level, the conservation of the Wadden Sea takes place at the trilateral level, i.e. in collaboration between the Netherlands, Germany and Denmark. Since the 1970s, this trilateral collaboration has gradually intensified and resulted in common declarations and policies concerning the conservation of the Wadden Sea area (Wolff et al., 2003). Between 1978 and 2014, 12 governmental Wadden Sea conferences were held.

⁴⁶ Institute for Marine Resources and Ecosystem Studies, part of Wageningen University.

⁴⁷ Dutch Centre for Field Ornithology.

At the sixth trilateral Wadden Sea conference (Esbjerg 1991), it was decided to “concentrate recreation pressure by allowing ships to stay only within 200m of the nearest channel at low water”. After the Dutch government implemented this rule in 1993, beaching was only allowed within 200 meters of the buoyed fairways. This regulation can be characterized as a centralized form of governance as it was top-down oriented and national governments were the initiating actors.

Since the 1990s, integrative scientific reports (Quality Status Reports - QSRs) on the state of the Wadden Sea area have been a key source of knowledge for trilateral governance and notably the trilateral conferences (De Jong et al., 1999). As the scientific report of the Esbjerg conference indicates, the 200m-rule was established on the basis of generic quantitative data on marina capacities in terms of the number of moorings, sluice passages to and from the Wadden Sea, and the “number of boats on the Wadden Sea on representative days” (NFNA & CWSS, 1991: 149). The latter information was generated through aerial surveys (NFNA & CWSS, 1991: 149). Thus, the knowledge system that informed this regulation was geared towards creating generic, quantitative scientific knowledge, and the knowledge-governance interface was science-based.

Through explicitly linking knowledge integration in QSRs to trilateral conferences, knowledge creation and governance at the trilateral level are strongly connected. However, in case of the 200m-rule the research, decision-making and implementation took place in separate phases without feed-back loops; the 200m-rule did not have an adaptive character like the Nature Conservation Act.

3.5.1.3 THE CODE OF HONOR: RAISING AWARENESS

The 200m rule was contested by recreational boating CSOs as it limited their room to move on the Wadden Sea. One of the members of the CSOs explained this as follows:

“No beaching allowed beyond 200 meters from the channel [...] implies that the entire Wadden Sea area becomes off-limits. [...] You are allowed to [enter the area] but you don’t take the risk, because if you run aground on the ebb tide, you commit an offence.”

Moreover, they argued that it was based on an ill-defined notion of disturbance.⁴⁸ As an alternative to this rule they developed a voluntary code of conduct for sailors concerning “responsible beaching on the Wadden Sea”, which is called the Code of Honor (CoH).⁴⁹ This code contains practical

⁴⁸ Memorandum of Agreement on Responsible Beaching in the Wadden Sea, 2003.

⁴⁹ The initiators of the CoH include the Wad Sailors Association and the Association for Professional Charter Navigation.

rules on responsible behavior in order to prevent disturbances of birds and seals, such as “when the first birds fly up you are getting too close”. The underlying rationale is that, if the code is well-observed, “nature suffers no ill effects from beaching on – spatially speaking – a larger scale on the Wadden Sea”.⁵⁰ The CoH was introduced in the form of a four-year experiment from 2003 to 2007.⁵¹ This introduction marks a shift from the centralized governance mode of the 200m-rule towards self-governance; the arrangement came about as a bottom-up initiative from the CSOs and its main steering concept is that of voluntary self-regulation by sailors on the Wadden Sea.

The knowledge system of the experiment comprised a monitoring practice that was set up and executed in collaboration between professionals from governmental and terrain management organizations and amateurs from the CSOs. The aim of the monitoring was to show whether the introduction of the CoH would lead to changes in disturbances and violations. Observations of individual beaching activities and their effects were recorded using a standard monitoring protocol and served as input for yearly interim evaluations of the results of the experiment. Through consistently using this monitoring protocol, individual observations could be aggregated into more generic knowledge about the effectiveness of the governance by means of the CoH.⁵² At the end of the experiment, it was concluded that “the number of disturbances and violations does not seem to have increased. In this sense, the experiment can be considered a success”.⁵³ Consequently, the CoH was continued. More than 10 years after its introduction, it is still widely regarded as a successful and effective means of governance. For instance, one of the civil servants from the national government stated:

“I think it is very important to keep on calling for attention to the Code of Honor. It was introduced at the beginning of this century and it has simply proven to be very effective.”

Governance and knowledge creation were adaptively connected through an experiment which was informed by a participatory monitoring practice. Moreover, the CoH applies the dissemination of knowledge on responsible behavior and the promotion of awareness about disturbances among sailors as a steering mechanism for nature conservation. Thus, the knowledge-governance interface of this arrangement has an integrated and participatory character.

50 Responsible Beaching on the Wadden Sea: Final Evaluation, 2007, p.3.

51 In the Memorandum of Agreement on Responsible Beaching in the Wadden Sea this experiment was formally agreed upon. Its signatories are the Department of Agriculture, Nature and Food Quality (LNV), most of the organizations listed in footnotes 40, 41, and 44, and six other water recreation organizations.

52 Responsible Beaching on the Wadden Sea: Final Evaluation, 2007, p.4.

53 Responsible Beaching on the Wadden Sea: Final Evaluation, 2007, p.8.

3.5.1.4 THE THIRD WADDEN SEA MEMORANDUM: QUANTITATIVE REGULATION

The Wadden Sea Memoranda are policy plans issued by the Dutch government which formulate the outlines of the national Wadden Sea policy. The three consecutive Memoranda of 1980, 1994, and 2007 aimed at the protection and sustainable use of the Wadden Sea area, and contained policy measures for all kinds of human activities including recreational boating. Moreover, they aimed at stabilizing and controlling recreational boating in order to limit the recreational pressure on the Wadden Sea. Several drafts of the third Memorandum (2001, 2006) proposed to maximize the number of moorings in recreational marinas in the Wadden Sea area at around 4500. Recreational boating CSOs and provincial and municipal governments criticized this proposal as they argued that the number of moorings in marinas and the actual disturbance on the Wadden Sea are not causally related. For instance, one of the municipal civil servants stated:

“We quickly indicated that a maximization of the number of moorings was unacceptable to us, because we were of firm opinion that the number of moorings along the edges of the area does not influence whether or not natural values in the area are affected; the behavior of people is the only thing that matters.”

In line with this criticism the Dutch parliament replaced the quantitative regulation of moorings with a qualitative and integrated governance approach existing of a “widely supported body of measures for the ecological feasibility and manageability of recreational boating”; this approach was to be further elaborated and implemented by means of a Covenant between national, provincial and municipal governments.⁵⁴ The Memorandum determined that this Covenant was to become effective before 2008; otherwise, the quantitative regulation would be implemented nevertheless (VROM, 2007a: 17).

The adjustment of the Memorandum marks a shift from top-down governance in which the central government was the leading actor to decentralized governance with an initiating role for the provinces. One of the representatives of the nature conservation NGOs for instance stated about the realization of the Covenant:

“In 2007 the provinces got cracking with that. They gave the lead to the Province of North-Holland, which almost fully allocated the time of two of its civil servants so that went quite well, and they

54 Dutch Lower House of the States-General, assembly year 2006-2007, 26431, nr.76.

started a deliberation process. They convened everyone [...] [and said:] we have to do something.”

Moreover, this adjustment marks a shift with regards to knowledge. The explanatory note (VROM, 2007b) of the Third Memorandum (VROM, 2007a) states that “it is not so much the number of vessels, which usually stay in the fairways, but rather the time, place and behavior of vessels and persons on board that can lead to disturbance” (VROM, 2007b: 33). It therefore argues that it is necessary to “steer towards these latter aspects” through “raising recreational sailors’ awareness of the vulnerability of the Wadden Sea”(VROM, 2007b: 33).

3.5.1.5 THE RECREATIONAL BOATING COVENANT: QUALITATIVE GOVERNANCE

In December 2007, representatives of 13 recreational boating, governmental, nature conservation and harbor organizations signed the Covenant that had been announced in the Third Memorandum.⁵⁵ The rationale of the Recreational Boating Covenant (2008-2011) was that the “sustainable protection and the maximally natural development of the Wadden Sea area” can be combined with “economic development” and the ability of inhabitants and visitors “to experience nature in a broad sense”.⁵⁶ It aimed to attain these objectives through qualitative governance that focused on education and information in order to raise awareness and appreciation of the natural characteristics of the area. The execution program of the Covenant contained a large collection of initiatives including a vision on the responsible development of marinas, a communication and dissemination plan for the Code of Honor and a system of observation and information posts on vulnerable locations in the area, which was called “Wadden Watchers”.

A key element of the knowledge system connected to the Covenant was a monitoring program, which aimed to investigate the effects of the Covenant in terms of the behavior of people on the Wadden Sea and the occurrence of disturbances. It was a collaborative effort in which both professionals from governmental and terrain management organizations and amateurs from recreational boating organizations participated. Interviewees who were involved in the Covenant assess the results of the monitoring program quite differently. Some of them argue that the monitoring data is inconclusive on the effects of the Covenant as the involvement of amateur sailors and the low number of records limited its validity and reliability. For instance, one of the representatives of the nature conservation NGOs argued:

55 The signatories of the Covenant include the organizations that are mentioned in footnotes 39–42, three of the CSOs mentioned in footnote 44, and Staatsbosbeheer.

56 Recreational Boating Covenant, December 3, 2007.

“In fact, you let the fox guard the chickens. Moreover, you have a very poor observation position on board of a small ship; you simply can’t survey the area.”

Others argue that the collaborative monitoring was productive as it helped to raise awareness and facilitated dialogue among the participants. One of the coordinators of the monitoring for instance stated:

“We came together every autumn to discuss what we had seen that year. A really quantitative analysis of the data never came about, but we did have qualitative conversations about what we had seen. The recreational sailors started to realize: “gee, we never looked at our colleagues like this before”. Their awareness strongly increased.”

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When the quantitative regulation of the Memorandum was replaced by the qualitative regulation of the Covenant, a shift of knowledge systems occurred from a focus on generic, quantitative inventories to a focus on local, qualitative knowledge of the area among the people on board. At the same time, sailors became more empowered to use their knowledge within a mode of governance that became more self-regulatory, and some of them participated in the monitoring connected to the Covenant. Thus, the knowledge-governance interface became more participatory.

3.5.1.6 THE WADDEN WATCHERS: HOSPITALITY AS GOVERNANCE

The concept of the Wadden Watchers (WWs) was introduced by nature conservation organizations including Staatsbosbeheer and the WAD Foundation that have a long-standing experience with bird-watching posts in the Wadden Sea. Over the years, such posts have proven to be useful vehicles for informing vacationers who walk or sail around in the area about the natural qualities and vulnerabilities of specific locations. Since the mid-2000s, the coalition of NGOs have argued that a system of WWs is instrumental in improving nature management and they have been seeking external funding for this initiative (De Jong & Van den Heiligenberg, 2005: 56). In 2007, they introduced the WWs as an essential element of the Covenant; however, disagreement arose among the parties involved about whether or not the WWs were to be structurally implemented. For instance, one of the representatives of the NGOs stated:

“When the Recreational Boating Covenant came about, the NGOs made the implementation of the WWs system a prerequisite for signing it. The Covenant contained 12 or 13 or more points [...] that were executed, except for this one.”

Notably, governmental organizations have been critical of the initiative. One of the professionals from the national government for instance stated:

“A disadvantage [...] is: people have already entered an area before they receive information on the spot. That needs to be obviated by spreading good information in advance. Another disadvantage is that it draws in more and more people.”

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Therefore, the national government favors experimenting with WWs on selected locations over structural implementation. In 2014, WWs posts were started as pilots on three locations in the Wadden Sea. At this time, the concept of WWs had been reframed into the somewhat broader and friendlier concept of “hosting”.⁵⁷ This broader concept of hosting emphasizes hospitality and includes both Wadden Watchers on posts and other information activities aimed at sailors, e.g. in harbors.

The nature conservation NGOs are the initiating and leading actors in the WWs initiative. Moreover, the initiative aims at increasing the awareness and knowledgeability of visitors as a means of self-regulation. Therefore, this governance arrangement can be characterized as self-governance. In this case, knowledge and governance are strongly integrated as monitoring, knowledge dissemination and regulation are inextricably bound up with each other within one practice. The posts are manned by volunteers who are knowledgeable about the specific qualities of their location, and who transfer this knowledge to visitors. Therefore, the knowledge system that informs this initiative is based on “amateur expertise” and qualitative local knowledge.

3.5.1.7 THE PACT OF REDE: GOVERNANCE WITHOUT GOVERNMENT?

In 2009, a group of 12 recreational boating and nature conservation organizations started a collaboration called the Pact of Rede.⁵⁸ The closing of new areas by virtue of the Nature Conservation Act spurred strong criticism towards the national government, notably among recreational boating CSOs. A representative of the latter for instance explained about this collaboration:

⁵⁷ Action Plan Recreational Boating Wadden Sea 2014–2018, 2013.

⁵⁸ The initial participants in this pact were five CSOs mentioned in footnote 44, three of the NGOs mentioned in footnote 45, and four other recreation and fisheries organizations. The word “Rede” refers to both “reasonableness” and a tidal flat near the island of Schiermonnikoog.

“It started as a reaction to the approach of the department regarding the Article 20 areas. We felt that we were investing in the Covenant, and nevertheless the department kept on closing off extra areas.”

Moreover, many of the recreation and nature conservation organizations had found rapprochement through participating in the Recreational Boating Covenant. One of the nature management professionals for instance stated:

“The organizations became better acquainted through participating in the Covenant. They thought: let’s start the Pact of Rede to try to get closer to one another.”

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These developments incited the initiators of the Pact to search for new “steering mechanisms”.⁵⁹ The rationale of the Pact was that nature conservationists and recreational sailors were able to formulate a shared perspective without the involvement of the government on how to both conserve and experience the nature of the Wadden Sea. One of the sailors’ representatives for instance explained:

“The Pact of Rede [...] is our own initiative that brings together nature conservation organizations and recreational sailors. [...] What business do the jurists have to subject that to rules?”

A key activity concerning the Pact was a map-drawing session in 2013 during which the participants discussed which specific areas in the Wadden Sea are valuable or problematic from conservation and recreation perspectives.⁶⁰ This resulted in a consensus on which areas are the most critical and pressurized in the sense that they highly valuable for both conservation and recreation; these areas have also been referred to as “hotspots”.⁶¹ Moreover, the deliberations between the participants resulted in a consensus on the need for a more flexible way of closing off areas, which was coined “dynamic zoning”. The concept of dynamic zoning emerged out of the criticism of the limited flexibility of the process of designating closed areas under Article 20 of the Nature Conservation Act (see section 3.5.1.1). It entails adaptively closing off or throwing open specific areas based on observations of changing circumstances in the field. In 2013, a dynamic zoning pilot was executed in collaboration between a group of canoers and nature management professionals from the depart-

59 Agreement of Intention Pact of Rede, 2009: p.1.

60 Meeting report on the elaboration of the Pact of Rede, March 2, 2013.

61 Not to be confused with the concept of “biodiversity hotspot”.

ment of Economic Affairs.⁶² One of the latter explained about this flexible type of nature conservation:

“We want people [...] to be able to optimally enjoy an area. [...] Therefore, we need to sharply close off areas and investigate opportunities for doing so. That requires a tailored approach, it is very intensive. But it creates an optimal opportunity for experiencing the Wadden Sea.”

As the Pact of Rede at its onset explicitly excluded the government, its governance mode was predominantly self-governance. In later stages some civil servants from the national government became involved in the collaboration and discussions concerning the Pact. Therefore, although it primarily remained a self-governance arrangement, the Pact also got some characteristics of interactive governance. The experiential and local knowledge of the participants concerning the qualities of areas in the Wadden Sea played a key role in this governance arrangement. In this case, knowledge exchange and decision-making were integrated and were contingent upon the participation of both the recreational boating and nature conservation actors. Therefore, the knowledge-governance interface had an integrated and participatory character.

3.5.1.8 THE ACTION PLAN RECREATIONAL BOATING: COMBINING INITIATIVES

The evaluation of the Covenant (2012) showed that some of the Covenant initiatives needed renewed attention or had not been satisfactorily executed.⁶³ Consequently, a broad coalition of governmental, nature conservation and recreational boating organizations started the Action Plan Recreational Boating in 2014 as a follow-up to the Covenant. A key element of the Action Plan is “learning from hotspots” through pilot projects that combine control and enforcement, hosting, dynamic zoning and monitoring.⁶⁴ These pilots aim at learning about effective integrated governance that fits in with the local circumstances; they exemplify how the Action Plan combines elements from many of the preceding arrangements, such as the Covenant and the Pact of Rede. As in the case of the Covenant, the provincial governments played an initiating and coordinating role in the Action Plan.⁶⁵ Moreover, NGOs and CSOs have been actively involved in both the preparation and the execution of the Action Plan; therefore, it combines decentralized and interactive governance. One of the provincial civil servants for instance said:

62 Action Plan Recreational Boating Wadden Sea 2014-2018, 2013.

63 Berenschot and Royal Haskoning DHV, Wadden Sea Recreational Boating Covenant: Evaluation 2012, July 2012.

64 This coalition includes nearly all of the organizations mentioned in footnotes 39-42, 44, and 45, along with three individual municipalities.

65 As in the case of the covenant this was notably the province of North Holland.

“In this case it was chosen [...] to write the new Action Plan together with all of the stakeholders in order to create an as large as possible support.”

In the context of the Action Plan a new monitoring concept is under development. The monitoring related to the Covenant had proven to be unsuitable for identifying generic causal relations between recreational activities and disturbances of wildlife. The adjusted monitoring concept of the Action Plan still involves both amateurs and professionals, yet now focuses on “monitoring the behavior of vacationers and the local effects on the development of nature” in order to inform adaptive management on an ongoing basis.⁶⁶ Moreover, a new aspect of the monitoring concept is the connection of this local monitoring to larger-scale and more science-based monitoring networks, such as the bird monitoring network of SOVON. The aim of this connection is to eventually increase insight into the more generic effects of recreation on bird and seal populations in the Wadden Sea. As the Action Plan aims to combine these various monitoring practices, it aims to bring about a knowledge-governance interface that is both participatory and science-based.

The arrows signify the main shifts and relations between the governance arrangements as described in section 3.5.1. The dark bars signify governance arrangements with a formal status. The light bars signify initiatives that did not (yet) have a formal status but that were of influence in the governance regime. The bar under “WS Memo” does not refer to the entire Wadden Sea Memorandum, but to the part of the Memorandum that dealt with quantitatively regulating recreational boating (see section 3.5.1.4).

3.5.2 How governance and knowledge have changed

The development of the recreational boating governance regime (see Figure 3.1) can be characterized as partly an accumulation and partly a sequence of governance arrangements, rather than a complete replacement of arrangements or governance modes (cf. Driessen et al., 2012: 153). The accumulation occurred as new arrangements were started through the years, while others were continued; the sequence occurred as new arrangements were started as alternatives or follow-ups to preceding arrangements. For instance, the Code of Honor and the Covenant were started as alternatives to the 200m-rule and the regulations of the Memorandum respectively. Both of these alternative arrangements emerged out of cri-

66 Action Plan Recreational Boating Wadden Sea 2014-2018, 2013: 17.

tiques of the rigid, quantitative, top-down regulations of their “predecessors”. Thus, the critical scrutiny of governance arrangements and the will to improve governance by making it more flexible and participatory have served as key driving forces in the development of this governance regime.

Through this ongoing process of initiative, critique, and improvement of governance, the mode of governance within this regime has shifted from predominantly centralized governance to a combination of governance modes with a stronger emphasis on decentralized, interactive and self-governance. Again, this has not been a process of the complete replacement of governance modes, but rather of the partial replacement and partial accumulation of governance modes. This shift has entailed the partial devolution of governance from the (supra)national to the provincial and regional level. This means that the organizations at these lower levels of government have gained responsibilities and coordinating tasks, and thus a stronger position, in governing recreational boating. Moreover, this shift has entailed that nature conservation and recreational boating organizations have become more prominent players within this domain of governance. Both of these groups have put much effort in attaining this increased prominence through initiating governance arrangements such as the Pact of Rede and the Wadden Watchers. However, this governance shift does not only imply that organizations have become more prominent players. It also implies an empowerment of individuals, such as individual sailors. Through the emergence of self-regulation arrangements such as the Code of Honor, individual sailors have gained both more freedom and more responsibility for their own actions.

Simultaneously with this governance shift, a shift of knowledge systems has taken place that may be characterized as the diversification and integration of knowledge. Initially, the centralized governance of recreational boating was predominantly informed by knowledge with a clearly quantitative component provided by specialized experts and research organizations. As the above described accumulation and sequence of governance arrangements took place, knowledge systems shifted accordingly. Firstly, as qualitative governance emerged as an alternative to quantitative governance, which is exemplified by the emergence of the Covenant as an alternative to the Memorandum regulations, qualitative knowledge also gained a more important role. This means that the local knowledge of specific qualities and vulnerabilities of specific areas has gradually gained importance as an alternative and a complement to generic quantitatively-oriented knowledge. Secondly, the empowerment of stakeholders from both the worlds of recreation and nature conservation implies that their knowledge, which is based on their experiences and observations in the

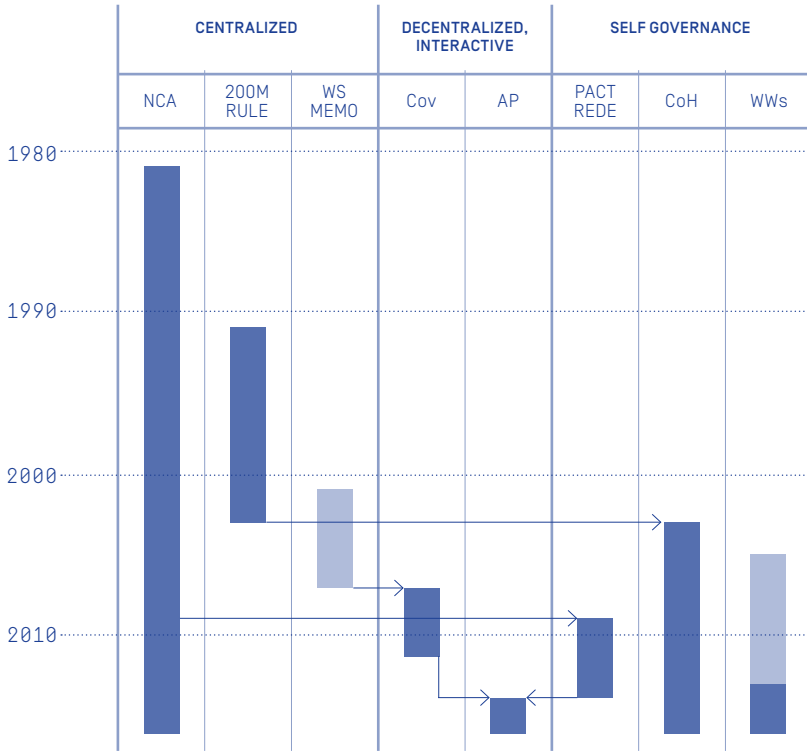


Figure 3.1: The development of the recreational boating governance regime 1981-2014. The arrows signify the main shifts and relations between the governance arrangements as described in section 3.5.1. The dark bars signify governance arrangements with a formal status. The light bars signify initiatives that did not (yet) have a formal status but that were of influence in the governance regime. The bar under “WS Memo” does not refer to the entire Wadden Sea Memorandum, but to the part of the Memorandum that dealt with quantitatively regulating recreational boating (see section 3.5.1.4).

area and which is exchanged within their networks, has gained importance within this governance regime. Thirdly, several of the emerging governance arrangements had or still have a strongly integrated character. This tendency towards integration can also be observed in the knowledge systems that are connected to these arrangements. For instance, recent governance arrangements such as the Action Plan have served as forums for the integration of knowledge by facilitating the collaboration between professionals and amateurs in the creation and exchange of knowledge.

These shifts of governance and knowledge imply that a shift of knowledge-governance interfaces has occurred. The governance regime examined in this case study comprises various arrangements connected to specific knowledge systems. Therefore, it comprises multiple knowledge-governance interfaces; we cannot speak of a single knowledge-governance interface in this case. A first aspect of this shift is the emergence of multiple coexisting participatory interfaces, such as the interfaces of the Covenant and the Pact of Rede, next to more science-based interfaces such as that of the Nature Conservation Act. This means that the knowledge of various groups of stakeholders has gradually taken on a more prominent role in governing and decision-making. Furthermore, the interfaces within this regime have shifted towards a more adaptive, reciprocal relation between knowledge and governance. This is exemplified by the introduction of dynamic zoning and the various experiments and pilots that have been performed over the years.

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3.6 DISCUSSION AND CONCLUSIONS

Our analysis shows that shifts of governance modes and knowledge systems go hand in hand. In the case presented in this paper, the mode of governance has shifted from predominantly centralized governance to a combination of governance modes with a stronger emphasis on decentralized, interactive and self-governance. Simultaneously, a shift of knowledge systems has occurred, entailing the rising prominence of qualitative local knowledge, stakeholders' knowledge, and knowledge integration. Moreover, more participatory knowledge-governance interfaces have emerged within this governance regime.

These findings suggest that environmental governance and knowledge are not so much two worlds separated by a gap; rather, they are often closely interconnected. This interconnectedness manifests itself in various ways. Firstly, many environmental issues, including recreational boating in protected nature areas, are regulatory and epistemic issues at the same time; the ways of regulating and knowing them are bound up with each other. Salient examples of this are the various governance arrangements in this case that have employed the raising of awareness and knowledgeability as a steering mechanism. Consequently, we gain explanatory power by looking at the ways of governing such issues in terms of both their regulatory and epistemic aspects (cf. Jasanoff, 2004). Secondly, the development of the governance regime in this case has been a process of scrutinizing centralized governance and initiating alternative governance modes. Each time a new initiative was started, both a new governance

arrangement and a new knowledge system came about. This process, which recurred several times over the last decades, exemplifies how governance arrangements and knowledge systems are constructed together. In other words, they are coproduced (Jasanoff, 2004). Thirdly, governance arrangements and knowledge systems have a mutually constitutive relation, which means that they both restrict and enable each other. For instance, the centralized governance of the 200m-rule restricted the possibilities of including stakeholder knowledge in governance. To give another example, the participatory monitoring of the “responsible beaching” experiment was decisive in enabling the structural implementation of self-governance by means of the Code of Honor.

Moreover, our analysis suggests that the development of an environmental governance regime can be seen as an innovation process in which governance and knowledge are coproduced through experimenting, learning, and re-framing. In this case, this learning process pertains to which governance approaches are effective and to what are the best ways to create and exchange knowledge in order to inform governance. This latter aspect is exemplified by the ongoing efforts to improve monitoring based on previous monitoring experiences. Conceptual innovation has notably occurred in the form of new or renewed governance concepts such as “dynamic zoning” and “hosting”. One lesson from this analysis is that room for experimentation is an important factor in improving environmental governance.

A second lesson is that a shift towards more interactive and self-regulation-based environmental governance implies that the role of knowledge in governance shifts as well. Consequently, those who want to set a shift in motion towards higher stakeholder involvement in environmental governance need to deal with the question of how to give shape to the creation and exchange of knowledge in such a changing context. A key issue in this respect is that the knowledge of various groups of stakeholders is a valuable source for governance. Moreover, productive interactive governance may require connections between various forms of knowledge; practices of joint knowledge creation such as collaborative monitoring are instrumental in making such connections.

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