



# Moving out or living on a mound? Jointly planning a Dutch flood adaptation project



Dik Roth<sup>a,\*,1</sup>, Madeline Winnubst<sup>b,1</sup>

<sup>a</sup> *Sociology of Development and Change, Wageningen University, Wageningen, The Netherlands*

<sup>b</sup> *Utrecht School of Governance, Utrecht University, Utrecht, The Netherlands*

## ARTICLE INFO

### Article history:

Received 23 December 2013

Received in revised form 19 May 2014

Accepted 2 June 2014

### Keywords:

Flood adaptation  
Flood risk management  
Governance  
Participation  
Room for the River  
Spatial planning

## ABSTRACT

All over the world spatial flood risk management policies are on the rise. This paper analyses the planning process for the Overdiepse polder, a so-called “Room for the River” project in the Netherlands. After high water in the 1990s, the Dutch government changed its flood risk management policy. While before 2000 it leaned heavily on dikes to separate water from land, after that year spatial measures to “let the water flow” were introduced. This required the integration of two formerly separated policy domains: flood risk management and land use planning. In the densely populated and economically highly developed Netherlands, returning space to the river unavoidably impacts on the lives and livelihoods of those who live and work along the rivers. Therefore, such spatial measures to decrease flood risk have to be negotiated with various stakeholders. The planning process towards making the Overdiepse polder suitable for temporary water storage deserves more in-depth analysis. We describe and analyze the development of relationships between key actors in the planning process, with a focus on planning practices rather than on assumptions about the existence of certain types and qualities of relationships. We conclude, among others, that citizen involvement can, under specific socio-political and institutional conditions, build trust among stakeholders and increase local legitimacy for interventions by government agencies. However, it should not be idealized as “self-governance” or assumed to be part of a unidirectional change in water interventions towards new relationships between actors.

© 2014 Published by Elsevier Ltd.

## Introduction

Governments, policy makers and water managers all over the world are reconsidering flood risk management strategies based on controlling rivers through infrastructural engineering. Instead, “space for the river” approaches are nowadays increasingly popular.<sup>2</sup> Rethinking of flood policies may be driven by earlier flood experiences or a growing awareness of flood risk. It may be part of attempts to stop ecological degradation by changes in riverine landscapes, or be related to emerging adaptive strategies for the expected effects of climate change (see Verkerk and van Buuren,

2013).<sup>3</sup> In Europe, recent European Union flood risk regulations and policies have a considerable impact on national flood policies and strategies. Implementation of Directive 2007/60/EC on the assessment and management of flood risks increases policy interactions between the domains of water and spatial planning (Hartmann and Driessen, 2013; Rouillard et al., 2014). Countries were obliged to assess and map flood risks (by 2011 and 2013 respectively), and to have flood risk management plans (by 2015). The Water Framework Directive also requires that measures are aligned with other countries in shared river basins.<sup>4</sup>

European policies may create new opportunities for integration of flood risk management and spatial planning, but their success highly depends on the framings and institutional

\* Corresponding author at: Wageningen University, Department of Social Sciences, Sociology of Development and Change, Hollandseweg 1, 6706 KN Wageningen, The Netherlands. Tel.: +31 317 484689.

E-mail address: [dik.roth@wur.nl](mailto:dik.roth@wur.nl) (D. Roth).

<sup>1</sup> Both authors have contributed equally to this publication.

<sup>2</sup> For an early contribution on such spatial approaches, see Cuny (1991).

<sup>3</sup> Often “space for the river” discourses and policies combine various drivers and justifications, such as ecological river restoration, flood risk management, or the aim to create synergies between them (see Warner et al., 2013a,b; Moss and Monstadt, 2008). In the Netherlands the focus gradually shifted from river restoration and “nature development” towards flood risk considerations.

<sup>4</sup> See [http://ec.europa.eu/environment/water/flood\\_risk/](http://ec.europa.eu/environment/water/flood_risk/) (accessed 15.04.14).

processes required for this (Moss, 2004). Where flood risk management strategies have a history of physical and policy separation from spatial planning, these domains are not “natural partners”. This is illustrated by recent experiences with such spatial strategies in various European countries. For the United Kingdom, for instance, Johnson and Priest (2008) discuss what they call a “paradigm shift” in flood risk management including “making space for water”. Potter (2013, 89), however, argues that “a reliance on hard-engineered defences” is persistent while spatial measures remain limited to isolated schemes.<sup>5</sup> For Germany, Hartmann (2013b; see Hartmann, 2013a) concludes that making space for rivers is an ongoing struggle that continues to be politically contested. While there is no further restriction of river space, expansion through floodplain restoration remains problematic. Main problems are a continued focus on technical-infrastructure solutions, and increasing pressure on the economically valuable floodplains.

In recent years much experience with spatial water solutions has been gained in the Netherlands. Two high-water events in the main Dutch rivers in 1993 and 1995 triggered a shift in Dutch flood risk management policy (Baan and Klijn, 2004).<sup>6</sup> The near-floods made water experts aware of the risks of diking (Wiering and Driessen, 2001; van Stokkom and Witter, 2008; Wolsink, 2010). Growth of population density and economic infrastructure in the last century have considerably increased flood risk in case of dike failure (Netherlands Environmental Assessment Agency, 2004, 2010). Emerging debates about the impact of climate change on river discharges further stimulated the consideration of alternatives (de Vries and Wolsink, 2009).<sup>7</sup> The new strategies of integrating flood risk management with spatial planning replaced the earlier focus on diking (Wiering and Arts, 2006; Neuvel and van den Brink, 2009). The Dutch delta context – 26% of the country is located below sea level while another 29% is flood-sensitive – added to its urgency (Netherlands Environmental Assessment Agency, 2004, 2010).

Thus, creating space for rivers became the core of a “living with water” strategy, resulting in the Dutch “Room for the River” (RR) policy line and programme (Wiering and Driessen, 2001; Kabat et al., 2005). RR moved away from the spatial-infrastructure separation of water and land, focusing on their integration through the (partial) removal of “hard” boundaries (van Buuren et al., 2011). Developed from the mid-1990s and formally introduced in 2000, RR should make the river system flood-proof by 2015. It consists of 34 (initially 39) project interventions scattered along the Rivers Rhine and Waal, Meuse, IJssel and Lek. All projects of this estimated 2.3 billion Euro programme share two basic objectives: first, contributing to flood safety by increasing river flow and discharge capacity and decreasing water level; second, enhancing “spatial quality” and stimulating regional economic development.<sup>8</sup> Other important elements are collaboration between actors at multiple levels and decentralized planning and implementation (Ministry of Infrastructure and the Environment, 2012a; see Rijke et al., 2013).

Where RR is implemented, water enters the life-worlds of stakeholders behind the dikes, with sometimes important consequences. In the Overdiepse polder discussed here, for instance, this radically

<sup>5</sup> Spatial flood risk management measures gained a new urgency with the floods of early 2014. See, e.g., <http://www.theguardian.com/uk-news/2014/feb/13/uk-floods-essential-guide> (accessed 15.04.14).

<sup>6</sup> In 1995 250,000 people and one million animals were preventively evacuated.

<sup>7</sup> For the changing ways in which climate change discourses influence policy domains dealing with “wicked” problems like flood defence, see Vink et al. (2013).

<sup>8</sup> It should, for instance, prepare River Rhine for a discharge capacity of 16,000 m<sup>3</sup>/sec. The maximum discharge ever recorded is 12,600 m<sup>3</sup>/sec (Baan and Klijn, 2004). Recently a third objective has been added in government communication about the programme: making sure that extra room for the rivers needed to cope with growing discharges due to climate change will remain available. See <http://www.ruimtevoorderivier.nl/english/room-for-the-river-programme> (accessed 15.04.14).

changes the area’s protection status (and hence the land value) from “inside” to “outside the dikes”.<sup>9</sup> Spatial claims for water – and the related conflicting interests, norms, values, convictions and knowledge (Neuvel and van der Knaap, 2010: 285) – often collide with claims for other uses (e.g., agriculture, settlement, recreation, nature and landscape, economic infrastructure). While in the 1970s and 1980s the big conflicts were about dike enhancements, RR is characterized by competing spatial claims for water and other uses (van der Ham and Heersen en beheersen, 1999; Lintsen, 2002; van Heezik, 2008). Therefore, in spatial flood risk management policies negotiation and cooperation between governmental and non-governmental stakeholders about options for combining “green” and “blue” functions have become crucial (see Warner and de Groot, 2011).

Notwithstanding RR’s programmatic unity, its projects differ in types of interventions (e.g., dike relocation, floodplain excavation, by-pass construction, retention), in the balance between technical and spatial solutions, in effects of measures on the water level, and in how the objective of “enhancing spatial quality” (see Klijn et al., 2013) is locally interpreted and given shape. They also differ in how flood protection measures are linked socially, politically, and policy-wise to other domains, values and interests in terms of stakeholders involved, and in the specific styles of governing taking shape (degree of decentralization; modes of participation and deliberation, scope for joint planning) (Winnubst, 2011; Edelenbos et al., 2013). RR actually represents a variety of modes of governing spatial measures, characterized by different degrees of socio-political justification, local legitimacy and support, contestation and conflict.

Though the body of scientific literature on these spatial flood risk measures is growing, there are still important knowledge gaps. In-depth studies of the intervention processes remain relatively scarce, and many dimensions seldom explored. Policy documents often create an image of unproblematic cooperation and co-creation, as do some scientific publications (e.g., Rijke et al., 2013). Detailed scientific case studies of RR projects can contribute to opening up this black box of RR planning and implementation. Both single case studies and comparative studies can put into perspective policy claims about styles of governing such projects and the kind of interactions with local stakeholders, and thus contribute to a deeper understanding of the programme in practice. Important general lessons can also be drawn for similar future interventions in the Netherlands and abroad, and the potential role of citizens and other stakeholders in them.

This paper contributes such insights from one intensively researched RR project, the Overdiepse polder in Noord-Brabant Province (Fig. 1).<sup>10</sup> Framed as an iconic example of the Dutch “spatial turn” in flood risk management policy and climate adaptation, it has attracted the attention of water experts, policy-makers and the media world-wide.<sup>11</sup> Indeed, the out-of-the-box solution found, the prominent role of inhabitants, and the decentralized planning process are quite remarkable. However, little attention has been paid to the specific societal context in which the Overdiepse polder project could emerge, to the governing practices that developed, and to how the planning process was experienced and influenced by various stakeholders. Such insights can only be provided by an in-depth analysis of its planning and implementation, which we

<sup>9</sup> A polder is a low-lying area surrounded by dikes, where the water level is controlled by pumping devices (originally windmill-powered).

<sup>10</sup> In an earlier article we discussed negotiations about property rights (Roth and Winnubst, 2009).

<sup>11</sup> See, e.g., <http://www.nytimes.com/2013/02/17/arts/design/flood-control-in-the-netherlands-now-allows-sea-water-in.html?pagewanted=all>.

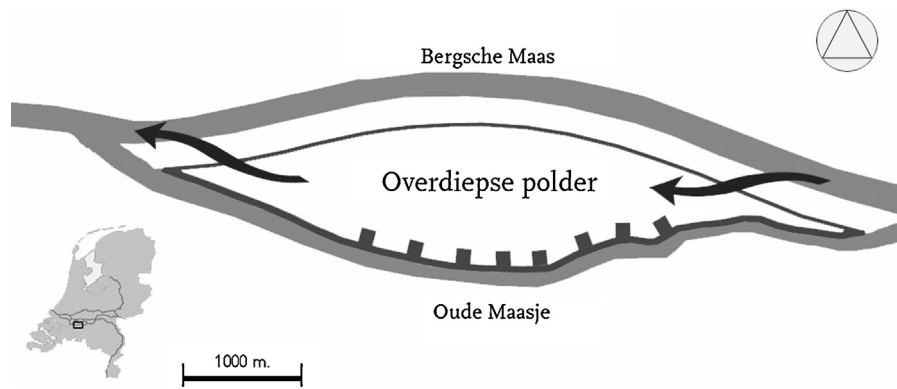


Fig. 1. Map of the Overdiepse polder.

present here.<sup>12</sup> This yields important lessons about interventions to create space for water, and about participatory processes and styles of governing such processes more generally (see Rouillard et al., 2014).

Our analysis of the Overdiepse polder case aims to answer the following questions:

1. In what wider context could this plan for a spatial solution emerge and be further developed?
2. What relationships between actors involved and what practices of governing were actually developing in the Overdiepse polder planning process?
3. How can these relationships and practices be related to scientific and policy claims about new forms of participatory governance or self-governance?

The core of our analysis (answering question 2) focuses on the following dimensions of the process: first, the different positions and capacities of the inhabitants to deal with a project which has a huge impact on land tenure; second, relationships evolving between inhabitants, and between inhabitants and their representative organization; third, relationships between the farmers' representative organization and the province; and fourth, relations between the province and the national government.

Our analysis is based on longitudinal research, primarily through in-depth interviews with stakeholders. Additional information derives from other sources (press, newsletters, policy and project documents, scientific publications). It covers a long period of planning (2000–2009) and implementation (2010–now). As our own research involvement started in 2005, the 2000–2004 period is mainly covered through policy reports and other documentation, and in-depth interviews held from 2005 onwards. We were advised not to disturb this sensitive planning process by interviewing all inhabitants of the polder. Instead, we had regular in-depth interviews (at least twice a year; total 21 interviews) with the (vice) chairman of the *Belangengroep Overdiepse polder* (Overdiepse Polder Interest Group; hereafter OPIG), the organization representing the polder inhabitants. In addition, we interviewed officials of Noord-Brabant Province, the project manager (2008–now) of the water board Brabantse Delta responsible for project implementation, and representatives of RR. After the planning process we held 11 in-depth interviews with inhabitants and former inhabitants (six “stayers” and five who moved out).

<sup>12</sup> The distinction between planning and implementation as different “stages” is analytically not very useful. As will be discussed below there was selective implementation during the planning process (e.g., buy-outs), to convince the population that the project would be a *fait accompli*.

After this introduction the paper consists of four sections. First we discuss participatory processes in relation to flood risk management policies from a theoretical perspective. We then introduce the Overdiepse polder case and its emergence as a RR project. Next, we discuss the planning process, focusing on the characteristics of and relationships between actors as mentioned above. We end this paper with a discussion, conclusion and some policy recommendations for similar interventions in land use related to flood risk management or infrastructure.

### The many faces of stakeholder participation in Dutch flood risk management policy

#### *Problems with current approaches to stakeholder involvement*

The shift from infrastructural to spatial flood risk management has relatively broad political support, both in the Netherlands and abroad (Samuels et al., 2006; Verkerk and van Buuren, 2013; Warner et al., 2013a,b). However, spatial water solutions can have important consequences for the risk and protection status of citizens, the value of their property, and their daily life and economic activities. Hence, such solutions tend to be sensitive and locally contested (Wolsink, 2010). Water problems, moreover, are “wicked problems” characterized by complexity and uncertainty, and the involvement of various actors who disagree about values, knowledge, and framings of problems and solutions (Rittel and Webber, 1973; see Hartmann and Driessen, 2013). Often such policy issues are characterized by “dialogues of the deaf” involving complex interactions between science and policy (Van Eeten, 1999). Policy-makers' realization that this requires new styles of interaction, negotiation and decision-making also holds new opportunities for citizen involvement (Faysse, 2006; Gaventa, 2006; Warner, 2007). Governmental actors want water interventions to be seen as legitimate (and to be supported, or at least accepted) by those experiencing them, as this increases the chance of success of interventions. A more participatory style of interacting with local stakeholders can contribute to this (see e.g., Warner et al., 2013a,b).

However, around the turn of the century the Dutch Department of Public Works and Water Management (hereafter *Rijkswaterstaat*) was primarily reputed for its technocratic, command-and-control management style (Disco, 2002; Lintsen, 2002; Wolsink, 2006). In a society where flood risk management had become firmly defined as a government responsibility and risk awareness had almost faded (van Stokkom and Witter, 2008), the agency derived its legitimacy mainly from its professional engineering expertise in combination with a framing of flood risk management as an infrastructural war against the ever-threatening water. “Securitization” of flood issues – framing them as essential national security issues that cannot be left to protracted participatory processes or negotiated solutions

– has proven an effective discursive strategy, which legitimizes a top-down, centralized style of governing (Warner, 2011; Warner et al., 2011; see van Buuren et al., 2011).<sup>13</sup>

Seen from that perspective, experimentation with participatory approaches was really innovative, especially compared to other domains, such as urban innovation. Wider societal developments and institutional changes (e.g., in EU regulation; see Hartmann and Driessen, 2013) in the water domain towards more integrated approaches that build on stakeholder involvement made a top-down style increasingly problematic (van Buuren et al., 2011). This rethinking of styles of water governance is clearly visible in RR. *Rijkswaterstaat* itself communicates about these complex and multidimensional processes as if they are natural, unambiguous and unproblematic. Thus the corporate factsheet for RR – stressing, by the way, cooperation between governments rather than with citizens – mentions “freedom for regional and local governments to plan and implement plans within national boundary conditions, monitoring plans and decisions made by the regions; regular, informal consultation towards pro-active problem solving while sharing knowledge and experience” as the “modernizing elements of cooperation by governments within Room for the River” (Ministry of Infrastructure and the Environment, 2012a). Similarly, a factsheet on “the Dutch approach” speaks of “interactivity between national and regional authorities” (Ministry of Infrastructure and the Environment, 2012b). The agency has also discovered the concept of “governance” – no doubt intended to mean “good governance”. The factsheet “Making room for governance” states that “the local government bodies involve residents, businesses and other stakeholders including conservationists in planning and implementation of the projects” (Ministry of Infrastructure and the Environment, 2012c).

In scientific literature various concepts are used to make sense of policy changes like RR that are supposed to reflect a more integrated and adaptive, open and deliberative style of governance that includes citizen involvement. Examples are “co-management”, “co-governance”, “joint planning”, “interactive policy-making”, “multi-level governance”, and “self-governance” (see e.g., Gaventa, 2006; Few et al., 2007; van Buuren et al., 2011; Warner et al., 2013a,b). Such changes are often theoretically related to larger institutional changes in water policy and governance. van der Brugge et al. (2005: 173) see a shift from an hierarchical and closed water management style towards a more participatory and interactive style within a broader “transition” from a 20th century management style to a 21st century interactive style. Wiering and Arts (2006) see “new modes of governance” (though they doubt whether these are related to deep institutional changes). Evaluating RR in the light of these discussions, Rijke et al. (2013) see a change to “integrated water management”, though they doubt its permanence and conclude that it is still too early to speak of a transition (2012: 379).

Both policy and scientific accounts are, in our view, problematic. About the first we can be short: they frame RR interventions as basically unproblematic, and do so in a way that is a-historical, as if other styles of governing have never existed or do no longer exist. RR project documents and other formal communication present rather sanitized representations of how such projects are negotiated and how intervention processes are experienced and influenced by various stakeholders. The normative use of “governance” as synonymous with “good governance” closes debates about how such styles of governing work out in specific intervention

contexts, and to what extent they represent actual practices and real-life relationships developing between actors rather than intervention images or models (Long and van der Ploeg, 1989; see Pollitt and Hupe, 2011; van der Arend and Behagel, 2011).

Many scientific accounts of RR processes suffer from a similar distancing and abstracting from real-life practices and experiences. Often they are preoccupied with answering questions of “success” or “failure” (Mosse, 2004) on the basis of formal policy objectives and accounts rather than a contextualized understanding of the practices that are claimed to reflect such policies. Similarly, a question often asked is whether RR represents a “transition” towards a new governance style (see Rijke et al., 2013). In an evaluation of RR and its contributions to a transition towards integrated river basin management, Rijke et al. (2012: 377) conclude that the RR objective of spatial quality was “successfully integrated” in RR. However, the sheer fact of its implementation does not mean that specific notions of, and designs for, spatial quality are uncontested locally. Nor can anything be concluded about specific interventions without taking a closer look at what these mean locally in the context of RR negotiations. To support their conclusion, the authors mention the construction of a bridge in the Lent project of RR, near the city of Nijmegen. This RR project involved a locally deeply contested solution to increase the flow capacity by widening a bottleneck of the River Waal: a dike relocation for which about 50 houses, in some cases with great cultural-historical value, had to be demolished. The citizen alternative, which consisted of a land reservation for a possible dike relocation in the future, was not further explored.

The building of this bridge is hailed by the authors as a success case of implementing spatial quality. In the context of RR, however, “spatial quality” was directed at the flood risk measure rather than at the highway infrastructure. More specifically, the bridge was a “gift” of the central authorities to the municipality in the negotiations about the flood risk measure. This was not without reason. The central authorities planned a dike relocation that had not been communicated with the local authorities. As a result, the municipality had some room for manoeuvre in negotiations with the central authorities about implementation of a local housing project and a new bridge. While the impact on the housing project was compensated financially, the dike relocation – with a huge impact on the historical part of the village of Lent – was a precondition for building of the bridge.

The bridge can therefore also be seen as an instrument of pressure used by the central authorities to impose a specific national RR decision on the municipality. This makes quite some difference if it comes to evaluating the “success” of RR in terms of decentralized, co-created decision-making and “multi-level governance”. Such claims about relationships of cooperation between central, regional and local actors in “multi-level governance” are only meaningful in relation to more in-depth accounts of actual governing practices in specific contexts and localities of intervention through time. Such accounts should also analyze how water issues become institutionally and politically linked to other domains (in this case housing and highway infrastructure) and issues (not taking the citizen alternative seriously) (for the Lent case, see Winnubst, 2011). In our view such approaches miss the point of the emergent character of styles of governing water in different time-place contexts. Different place contexts or changes in the political and policy arenas through time can produce both “integrated”, open participatory processes and highly securitized, top-down ones. Partial jumps into more deliberative styles may alternate with relapses towards more top-down and securitized ones.

Stakeholder involvement through participatory processes, moreover, is far from unproblematic. In discourses of participation, the willingness and capacity to solve emerging tensions and conflicts through interactive and deliberative processes staged by the government are often assumed (van der Arend and Behagel, 2011).

<sup>13</sup> It can also generate policy attention, political support, and funding (for the Dutch Delta Committee: see Boezeman et al., 2013); push through specific measures without having to negotiate with critical populations (e.g., calamity polders; see below), and boost up profiles of politicians (Roth and Warner, 2007, 2009).

Participation is hailed as *the* way out of spatial-environmental conflict, stimulating citizen engagement in problem-solving, creating democratic legitimacy, and more transparent, efficient and effective interventions. Criticism often focuses on its instrumentality, its depoliticizing effects, its neglect of the workings of power, its influence on democratization processes, and its lack of transformative and empowering influence (e.g., Cleaver, 1999; Cornwall and Coelho, 2007; Reed, 2008; Michels, 2011). “Participating” actors have agency and are constantly developing their own “projects”, not necessarily resonant with or supportive of the motivations, objectives, and assumptions of those who try to enrol them in their projects (Long and van der Ploeg, 1989). Such alternative “projects” may also involve forms of non-participation, avoidance, non-compliance or resistance (Cleaver, 1999; see van der Arend and Behagel, 2011).

#### *From assumptions to a focus on practices*

Two issues are particularly relevant for our case study: first, the diversity of relationships between actors and of forms of citizen involvement covered by terms like “governance”; second, the tendency to focus on agreement and consensus, at the expense of disagreement and conflict. As to the first, stakeholder involvement can take various forms of a more or less instrumental or empowering character (Few et al., 2007; see Cornwall and Coelho, 2007). While the former often enrol people to secure support and increase the legitimacy of interventions, the latter contribute to changing power relations between intervening agencies and citizens. In typologies (e.g., Morrison, 2003; Reed, 2008), participation can be ordered as a “participation ladder”, based on level of participation and governance style (see Neuvel and Van der Knaap, 2010: 286). As the latter authors rightly argue, these are not fixed and mutually exclusive categories. We will show that elements of co-production, delegation, or “self-mobilization” (see Few et al., 2007) – all high on the participation ladder – may go together with elements of an authoritarian or at most consultative governance style in specific dimensions or stages of the process. Thus, a participatory and deliberative policy rhetoric does not exclude a top-down and technical-managerialist style of decision-making (Few et al., 2007; see Mosse, 2001). Even highly participatory styles of “self-government” can be analyzed as forms of governmentality, based not on the sheer exertion of power but on the enrolment of, and voluntary compliance by, citizens (Shore and Wright, 2011; see Bose et al., 2012).

Second, discourses of participation tend to downplay both inter-stakeholder and stakeholder-internal differences, disagreements, and conflicts, in favour of stressing consensus (Mosse, 2001; Few et al., 2007). This is crucially related to issues of representation in participatory processes, more likely in practice to be characterized by micro-politics “in which actors pursue various overt and covert negotiating strategies to achieve personal ends” (Few et al., 2007: 50). Assumptions of consensus may hide important differences that may deeply influence stakeholder processes over time. Willingness to participate is often assumed without asking who decides and on whose terms participation is shaped and organized. Non-participation, non-compliance and forms of resistance are either not taken into account or dealt with as deviations from the (consensual) norm. In addition, people are not equally positioned and capacitated to access and influence decision-making processes and articulate their concerns (Cleaver, 1999; Cornwall and Coelho, 2007; Few et al., 2007).

This focus on assumptions about actors, their relationships, and the activities developing in participatory processes needs to be balanced by approaches with a different focus. van der Arend and Behagel (2011) plead for a “practice-based approach” that gives more scientific attention to those who are participating instead of an exclusive focus on formal managerial routines, procedures and

venues created by government actors who try to manage, steer and orchestrate participatory processes. Attention to practices rather than such routines gives a better understanding of tensions, contradictions and conflicts, of contingent outcomes of participatory policy processes, and of participants’ own repertoires of values, norms, priorities, strategies and actions – of their “projects” (Long and van der Ploeg, 1989) – and how these interact more or less problematically with government modes of steering and controlling.

Growing evidence about Dutch spatial water measures in RR illustrates this: they are full of ambivalences, both perpetuating a “command-and control” culture and seeking societal support and democratic legitimacy through stakeholder involvement. Styles of governing and involving citizens may even vary within one project, showing both periods of participatory planning and top-down decision-making (Schut et al., 2010; Edelenbos et al., 2013). In the Lent project discussed above, for instance, we see problematic interactions of water interventions with settlement and infrastructure, landscape and cultural heritage in a governance context of – at the end of the day – top-down decision-making (Winnubst, 2011). In contrast with this case, the Overdiepse polder discussed below involves interactions between water storage, settlement, agricultural enterprise, and landscape values in a relatively experimental style with a substantial role for local stakeholders in decentralized planning and implementation (Winnubst, 2011).

Processes parallel to RR are also instructive. An example is the planning of so-called “calamity polders” for emergency water storage during peak discharges. Announcement of these plans, which had been developed in a top-down and expert-dominated way and were presented together with RR, completely surprised the population of the river landscape near the city of Nijmegen. It led to protests by citizens, municipal and provincial governments, particularly about one area called the Ooijpolder.<sup>14</sup> A governmental committee appointed to critically investigate the proposed idea of calamity polders ended up propagating the idea instead (Roth and Warner, 2007, 2009; Winnubst, 2011). The issue remained undecided until 2005. In the end, calamity storage did not receive sufficient political support. However, the top-down and “securitized” manner in which the plans were pushed parallel to RR’s more participatory and decentralized claims remains remarkable.

Such contradictory trends in water governance require an explanation of actor relationships and practices developing in specific intervention contexts rather than being elided by assumptions about unidirectional changes. We now turn to our case study of the Overdiepse polder.

#### **The Overdiepse polder**

The Overdiepse polder in Noord-Brabant Province is a small island formed by the Berge Maas and the Oude Maasje. Administratively it belongs to the municipalities of Waalwijk and Geertruidenberg (Fig. 1). Until the 1970s the area was regularly flooded and mainly used for extensive haymaking by farmers from outside. From 1975, after improvement of drainage, the polder became inhabited. In 2003 it had 94 inhabitants belonging to 19 households (Habiforum, 2003). When RR started, it contained 550 hectares of mainly agricultural land protected by dikes, and another 180 hectares of river forelands outside the dikes. With (then) 16 mixed (land-based) dairy and farming enterprises, and one pig-gery, the polder had – and still has – a mainly agricultural function. Farming enterprises covered between 25 and 40 ha each, with an average 60% of the land in private ownership and 40% in leasehold.

<sup>14</sup> The Overdiepse polder project had its roots in the same designation of “spatial reservations”, and initially led to a similar indignation – be it among a much smaller population than in the Ooijpolder.

Its location and small population made the polder suitable for temporary water storage. In the year 2000, when the government started looking for spatial solutions, the polder became a “searching area”. Some inhabitants read about the plans in the newspaper. Their first reaction was negative, and many considered litigation. They feared lengthy procedures associated with government plans “locking up” the area and decreasing the value of their property. Some inhabitants, however, saw an opportunity: combining water storage in the public interest of water security with their own entrepreneurial interests as farmers. They managed to convince most inhabitants that obstruction would not work and that a more critically positive attitude, in which they took the initiative, was needed. Thus, the farmers’ strategy shifted from opposition to negotiation with the government.<sup>15</sup>

After an information meeting a provincial delegate supported a request by some inhabitants to develop their own plan for combining living and agricultural activities with water storage.<sup>16</sup> The growing governmental attention to flood risk management and the new national message of “living with water” in this period formed a unique window of opportunity to propagate innovative water projects (Roth and Winnubst, 2009). Such projects fitted into a national water policy agenda of adaptation through spatial flood protection measures. Aided by Noord-Brabant Province and a regional farmers’ organization, the farmers devised a plan for the polder based on an age-old form of Dutch flood adaptation: building on mounds or “terps”.<sup>17</sup> With houses and stables rebuilt on these terps, river water can be temporarily stored in the polder during peak discharges, contributing around 27 cm of water level decrease in the river. The estimated frequency of such calamity storage is once in 25 years. To strengthen their negotiating position vis-à-vis the government, the inhabitants organized into the Overdiepse Polder Interest Group (OPIG).<sup>18</sup>

#### The terps plan

The terps plan made it possible for *Rijkswaterstaat* to reach its RR objectives of water level decrease during peak discharges and to enhance “spatial quality” in redesigning the polder (see Klijn et al., 2013). The plan basically entailed demolition of all farms, construction of eight to ten mounds on the southern side of the polder, rebuilding farm enterprises on these mounds (the other farming families having to move out), and lowering the protection dike on the northern side (see Fig. 2). Important preconditions for the inhabitants to agree were a government buy-out, compensation for moving (either to a terp or to a location outside the polder), and for damage caused by flooding. The inhabitants and the province also wanted to strengthen the agricultural enterprises in the polder by reallocating farming land left by farmers leaving the polder to those who stay.<sup>19</sup> The plan, with estimated costs between 100 and 125 million Euros, was formally adopted in 2009; implementation started in 2010 (see Province of Noord-Brabant, 2006).

#### Critical spaces for experimentation and change

The Overdiepse polder project is special in many respects. First, the inhabitants negotiated a key role in the planning process and managed to ensure that their plan was actually implemented



Fig. 2. Old and new: terp construction in the Overdiepse polder.

(see Fig. 3.). This distinguishes the Overdiepse polder from several other RR cases, where local plans were side-lined. Second, it became the first RR project for which planning responsibility was delegated to the province, while province and water board were responsible for implementation. Third, it became a so-called “fore-runner” project, meaning that planning could start before decision-making on the Spatial Key Decision Room for the River (the overall political-administrative decision procedure for RR) (see Ministry of Transport, Public Works and Water Management, 2006). Such opportunities do not emerge out of the blue. This critical space for change in the Overdiepse polder case can only be explained by a specific constellation of political-institutional conditions and priorities, policy changes, and windows of opportunity in the water policy domain. It also requires “mind space” (Warner et al., 2013a,b), an openness to creative solutions developed by non-state actors like knowledge institutes and citizens.

Some inhabitants were aware of this (see above). Deeply committed, trusted by other inhabitants, and experienced in local and regional politics, they laid the foundations of the plan. A provincial delegate, experienced in water issues and supportive of participatory processes, linked the terps plan to the national policy agenda of “creating space for water”. The (then) vice-minister of Transport and Water Management (who also propagated the concept of “calamity polders”; see above) had made water a priority issue (Roth and Warner, 2007, 2009). She established a “Reflection Group Water”, consisting of government representatives (including the provincial delegate), scientists and consultants, to search for appealing water projects in the new water policy. After the delegate had managed to get the terps plan listed, knowledge institute Habiforum worked on a joint comparison of options, from which the terps plan emerged as the best alternative. The Overdiepse polder became a so-called “mirror project”, an experimental space where government and citizens cooperated in finding sustainable water solutions (Habiforum, 2003).<sup>20</sup>

#### The planning process: major actors and their relationships

In this section we focus on the relationships between key actors developing during the planning process. Though the Overdiepse polder project allowed for decentralized planning, experimentation, and citizen involvement, the role of the central government was more than facilitating. It determined the overall conditions in

<sup>15</sup> Interviews vice-chairman Overdiepse Polder Interest Group (OPIG), Waspik 29-6-2007; 28-10-2008; 14-10-2011.

<sup>16</sup> Interview vice-chairman OPIG, Waspik 28-10-2008.

<sup>17</sup> A ‘terp’ (Dutch: terp) is a human-made dwelling mound. Such mounds were historically used to protect small rural settlements from flooding, before diking took over this function.

<sup>18</sup> Interview vice-chairman OPIG 29-6-2007; 28-10-2008.

<sup>19</sup> See <http://www.brabantsedelta.nl/overdiep/english>.

<sup>20</sup> Between 1999 and 2009 Habiforum was a knowledge network run by and for professionals in spatial planning and regional development; see <http://www.habiforum.nl/voorpagina.asp?> (last accessed 29.03.14).

**Box 1: Main issues in the planning process**

During the planning process the farmers (represented by the OPIG) and the provincial authorities negotiated many issues. Primary concern of the farmers was not water storage itself, but rather the reconstruction process and its consequences for their property and the continuity of their farming enterprises. Major issues and stumbling blocks were (see also Roth and Winnubst, 2009):

- The initial lack of flexibility in negotiations about so-called “anticipatory purchases” to buy out farmers who intended to leave the polder. How to move from a focus on rules, procedures, and risk avoidance towards flexibility and experimentation?
- The initial lack of provincial staff capacity, capability and flexibility to guide the planning process; the lack of provincial freedom due to the hierarchy of decision-making with the national level on top.
- The national government’s fear of creating precedents for other RR projects by buying out farmers against expropriation value (as against agrarian value, which is lower). This led to lower valuations of houses, stables and other farm infrastructure – which was not accepted by the farmers.
- Valuation of land quality of farmers in relation to future reallocation of land.
- How to base plans for reconstruction of the polder and reallocation of land on the knowledge and experience of farmers rather than on rules and procedures of officials?
- How to deal with new investments by farmers before reconstruction: e.g., for added manure storage capacity and stable capacity?
- The status of leasehold land located outside the dikes (in the river forelands) before project implementation. How to deal with the more limited buy-out and restart options for farmers who have such land in leasehold?
- Land reallocation: how to divide and use the land available after a farmer buy-out?
- How to compensate farmers for loss of value of their land (the polder’s new function changes the protection status, decreasing the land value).
- Compensation for damage to crops and infrastructure caused by inundations: what and how to compensate (one-time; event-based)?
- How to deal with possible rejection of milk produced in the polder after inundations causing pollution?
- Interpretation of “spatial quality”: how much agricultural land should change function for “nature restoration” and landscape values? To what extent can normative notions of quality and attractiveness be allowed to influence design of terps, stables and houses? Who pays?
- To what extent do formally equal rights to claim a terp translate into equal opportunities?
- How will the province guarantee that farmers have an equal chance to buy excess land in the future?

Source: research 2005–2013.

terms of water level reduction and spatial quality. It guarded the budget, and held ultimate decision-making power. The specific socio-economic context of the polder, with its small and relatively homogeneous population, provided relatively favourable conditions for participatory planning, but the complex process of redesigning and reconstructing the polder also created uncertainties, tensions, and conflicts between the farmer community and the various governments, and within the community. These have deeply influenced this process (Box 1).

Having explained the important initial roles of a provincial delegate, the Reflection Group Water, and knowledge institute Habiforum, the key actors we discuss below are the farmer population

and their representative organization OPIG, the province, *Rijkswaterstaat* – then represented in RR by its Project Desk for the Lower Reaches of the Rivers (*Bureau Benedenrivieren*)<sup>21</sup> – and the water board (*Waterschap Brabantse Delta*). Our discussion focuses on the different and shifting options, stakes and positions of the farmer households, as well as the relationships developing between farmers and the farmers’ organization, the province, and *Rijkswaterstaat*.

#### *Relationships between the inhabitants and the OPIG*

The Overdiepse polder community was originally quite coherent. As most farmers or their parents – originating from the same villages outside the polder – settled and established their farms in the 1970s, they shared a history of farming in the polder. Family ties and relationships between neighbours and friends tied the inhabitants together. In case of heavy rains in the harvest period, holidays, or illness farmers exchanged labour, tools and other support. Accidents and emergency situations united inhabitants in supporting the victims. But there were also internal differences: between those who lived along the western section of the main polder dike, and those living along the eastern section. Both groups had their own reciprocal relationships of labour exchange and mutual help in times of need.

The terps plan created more acute differences and rifts between farming households. As some of them had to leave the polder, each household had to decide whether to stay or move and, in the latter case, where to resettle. This process, which has taken eight years between the first buy-out and the negotiations with the last farming families, has crucially influenced planning and implementation, but also social relationships in the polder. Gradually the relative homogeneity of this farming community dissolved into diverging objectives, interests, and ambitions related to futures and styles of farming, locations in the polder, land tenure positions, and personal (household and family) circumstances. Farmers were also differently equipped with the capacities needed to cope with the uncertainties and stresses of intervention, to decide on their future, and to strategize their way through negotiations (Box 2). These factors did not only influence farmer household decision-making, but sometimes also utterly divided the inhabitants, putting increasing pressure on the OPIG and social relations in the polder.

The OPIG played an important but increasingly difficult and contested role in planning. Representing their interests, OPIG gave farmers a stronger negotiating position in dealing with the (provincial) government. The OPIG board needed the trust and support of its constituency to negotiate the project, but also had to show satisfactory results of meetings and negotiations to ensure continued support. Room for manoeuvre of the chairman and vice-chairman was limited: first, they were restricted by the general project objectives within a hierarchical constellation of relationships between central government and province. Second, they (and the province) were constrained by financial and other decisions, regulations and procedures that reduced the flexibility and room for experimentation needed. This led to frustrations among the inhabitants, who had to be convinced time and again by the board that continuation was worthwhile. Third, they could not always fully inform their constituency about (often informal) negotiations with the province, and were not fully informed about the private priorities, strategies,

<sup>21</sup> The project organization of RR consisted of a national desk, a regional desk for the upper reaches of the rivers (*Bureau Bovenrivieren*) and one for the lower reaches (*Bureau Benedenrivieren*), established to support decision-making about RR. Steering committees from both regional organizations had an advisory role to the national steering committee. In 2005 this project organization was replaced by the Project Directorate Room for the River (*Project Directie Ruimte voor de Rivier*; hereafter PDR), responsible for implementation of the *Rijkswaterstaat* policy.

Process stage	Date	Instrument	Lead partner
Preparatory stage (February 2000 – March 2001)			
Launch of White Paper on Room for the River	28 February 2000	Presentation of studies at Loevestein Castle	Vice-Minister of Water Management
Explanation of 'search areas' in Overdiep polder, among others	May 2000	Information meeting	Provincial delegate Noord-Brabant province
Publication report 'Overdiep... retention polder?'	March 2001	Report	Farmers' organisation ZLTO in cooperation with residents
Development stage (April 2001 – June 2003)			
Development of terps plan in Overdiep polder	October 2002 – June 2003	Design workshop with residents under supervision of Habiforum	Habiforum* in cooperation with residents
Decision-making stage (September 2003 – October 2008)			
Vice-Minister's agreement with fore-runner status of terps plan in Overdiep polder	2 June 2004	Vice-Minister's decision	Vice-Minister of Water Management
Signing of administrative agreement of terps plan in Overdiep polder	14 December 2004	Administrative agreement between Ministry of Water Management and Noord-Brabant province	Minister of Transport, Public Works and Water Management and provincial delegate Noord-Brabant province
Cabinet's decision Spatial Planning Key Decision Room for the River Part 1 includes terps plan in Overdiep polder	May 2005	Cabinet's decision	Cabinet
Vice-Minister's agreement with implementation of terps plan in Overdiep polder	9 October 2008	Vice-Minister's decision on revised Project Plan	Vice-Minister of Water Management
Implementation stage (June 2009 – 2015)			
Signing of cooperation agreement for implementation of terp plan in Overdiep Polder	10 June 2009	Cooperation agreement between Ministry of Water Management local and regional authorities	Vice-Minister of Water Management
Signing of implementation agreement of terps plan in Overdiep Polder	15 July 2009	Implementation agreement between Ministry of Water Management and Waterboard Brabantse Delta	Vice-minister of Water Management
Completion of 1 <sup>st</sup> -5 <sup>th</sup> terp	summer 2012 - summer 2013	Official opening ceremony	Farmer

Habiforum is a non-governmental organisation for multifunctional land-use.

**Fig. 3.** Process outline of the Overdiepse polder planning process.

and actions of the farmers. Finally, some farmers opposed the board because it did not support their private interests.

The province, in turn, needed the OPIG board as a representative body of the inhabitants. It fully relied on the chairman and vice-chairman, both capable, dedicated and trustable persons. In addition, the need for a "success story" on the part of the national government (a successful participatory RR project) and the province (a smooth province-led decentralized planning

and implementation) gave the farmer representatives some negotiating and nuisance power against the province. They used it in negotiating crucial issues like compensation and valuation of property (Box 1). However, the farmers – and their representative organization – also became internally divided on several issues. Two issues split up the polder community, with long-term consequences for the board: the first buy-out of a farmer family, and an accusation directed at the board that it had presented a majority



**Box 2: Different positions in farmer family decision-making on the terps plan**

A variety of factors influenced farmers' opinions on and estimations of the planning process, their options, opportunities and disadvantages in it, and their decisions on the crucial question of staying or moving. In this box some of these factors are summed up.

*Land tenure and property structure of farm enterprise:*

- Farmers with primarily land in ownership had a better negotiating position than farmers with land in leasehold, especially when located in the river forelands.
- Farming families who owned land along the southern side of the polder (where the new protection dike, road and terps were planned) had a locational advantage over those who owned or leased land elsewhere, where construction was not planned.

*Type of farming enterprise and styles of farming:*

- One farming family owned a piggery. Due to a provincial decision about the type of enterprise allowed to remain in the polder (land-based dairy farming), this enterprise had to leave the polder. Provincial policies of reconstruction and restriction of the piggery sector made it extremely difficult to find an alternative location.
- Some farmers with a highly entrepreneurial mind-set prioritized expansion of their enterprise outside the polder, using state-of-the-art technologies and incurring large debts; others feel more comfortable with small expansion in the polder and a less technology-intensive style of farming.

*Factors related to household, family and continuity of the farming enterprise:*

- For families with children in their teens or younger, the project came too soon. Families found it difficult to predict whether any of their children is interested in taking over. Continuity across generations is crucial in decision-making about additional investments.
- Health issues, social networks, and kinship ties may play an important role in decision-making.
- The wish to split up joint farming enterprises shared by brothers and their families created special problems of financial viability.

*Personal preferences, fears, ambitions and capacities to plan and negotiate the future:*

- Most farmers do not fear use of the polder for inundation and accept it as long as damage is covered; however, it made one household decide to leave the polder.
- Some farmers quickly saw the project as an opportunity, making their pre-existing ambitions (e.g., emigration; see Box 3) possible. Others remained undecided whether to stay or move, about new destinations outside the polder, or about continuing farming or not.
- Some farmers denied the possibility of the project ever becoming realized or thought they could strengthen their negotiating position by waiting for the province to make the first move; they avoided contacts with project representatives, postponed choices, refused cooperation, or actively obstructed certain project activities. As a consequence, they remained undecided, experienced extreme stress, became socially isolated and lost contact with the province, and came to be known as "unruly". Only the threat of expropriation made them take a decision.

Source: own research 2005–2013.

**Box 3: Two issues that divided the inhabitants and the OPIG****A: The first buy-out:**

One farmer family had since long been considering emigration to Canada to start a new dairy farm. Initially they feared that the water storage plans would make this impossible because of value decrease of their farm. Though the province feared creating a precedent, the OPIG board pushed the province towards a buy-out. The province needed a first smooth buy-out to show the polder population that the project was serious business. Moreover, the land becoming available could then be temporarily used by staying farmers whose land was to become affected by reconstruction. Thus the family could negotiate sufficient compensation for its land and other property, making a restart in Canada possible. There was a problem, however: this farmer had taken over the enterprise from his father almost ten years ago on the condition that he would not sell it within ten years. Selling within ten years would oblige him to share the proceeds with his brother and sister – and thus spoil his plans for Canada. To avoid this, when he had actually reached an agreement with the province he stipulated that the contract would be signed several months later, directly after the ten years' time limit had passed. The farmer successfully concluded his negotiations with the province just a few days after the ten-years' limit had passed and left for Canada in 2005, leaving his enraged relatives behind.

**B: Project alternatives and unanimity of decision-making:**

There were several alternative options for reconstruction of the polder. Three major variants had been devised by the farmers, supported by Habiforum: the terps plan (see above), the "central dike variant" (dividing the polder into a settlement compartment and a smaller storage compartment), and the "nature variant" (buying out all farmers; giving the polder back to nature). The first one had received the broadest support, while a minority of farmers supported the central dike variant or the nature variant. Problems arose when the former vice-chair of OPIG let the province know that the farmers had unanimously chosen the terps option. According to a former board member this had actually not been the case. He himself and some other farmers had preferred another alternative – the central dike variant. Though he could live with majority support for the terps plan, he stepped back from the board because this majority vote had been presented as a unanimous decision.

Source: own research 2005–2013.

choice in favour of the terps plan as "unanimous" to the outside world (Box 3).

The early buy-out created rumours about the details of the deal. Farmers feared that the terms of this first buy-out would be a precedent for their own negotiations. It created bad feelings among neighbouring farmers who had also coveted the land, and among the migrating farmer's kin, who felt taken in. The migrant's sister, married to another farmer in the polder, decided to withdraw from the OPIG as she saw the board as an accomplice. The board denies this, but acknowledges that it had pressurized the province to buy the property.<sup>22</sup> The issue of how support for the terps variant had allegedly been communicated to the province created more disension in the OPIG, which lost a board member this time. Though most farmers remained member, OPIG membership gradually split up between supporters of the board and those distrusting its intentions and activities.<sup>23</sup>

<sup>22</sup> Interview vice-chairman OPIG, Waspik 14-7-2006; 29-6-2007; 07-5-2012; 11-4-2013.

<sup>23</sup> Interview vice-chairman OPIG, Waspik, 7-5-2012; 6-12-2013; interview provincial project manager Overdiepse polder, Den Bosch, 24-5-2012.

Gradually an even more important issue emerged: the question whether the OPIG represented all farmers. OPIG had been established to represent the interests of the whole community. However, as planning proceeded OPIG came to represent the stayers rather than those moving out – at least in the perception of the latter. They felt unrepresented and unsupported in their exploration of locations outside the polder, negotiations with the province, and struggles to arrange permits for building and renovating farms. Several of them had a hard time balancing ongoing farm work in the Overdiepse polder with their search for a new location, negotiations about buy-out and purchase, and preparations for moving. Opinions are divided on the extent to which OPIG represented those moving out. The vice-chair of OPIG acknowledges that this shift of attention to stayers was part of the process. However, the (former) project manager denies this differential treatment of stayers and movers.<sup>24</sup>

Finally, relations between farmers and OPIG (and with the province) were strained by the discrepancy between the equal rights to a terp for all farmers, and farmers' estimations of their actual chances on the basis of the location of their land. As stated by the provincial project manager, those who were most outspoken about staying from the onset were farmers who owned land near the southern primary dike. During a meeting for the inhabitants on 13 December 2007 the province had stressed that those owning land and other property at the future location of the terps and other infrastructure were in an advantaged position for claiming a terp. Several farmers owning (or leasing) land elsewhere in the polder felt that this would diminish their chances of staying. This de-facto difference between formal rights and actual opportunities also became a divisive issue in the planning process, and sometimes led to accusation of the chairman and vice-chairman of the OPIG – who were both in a very secure and favourable position thanks to their land tenure.<sup>25</sup>

#### *Relationships with the province (through the OPIG) and the national government*

Initially there was little trust between inhabitants and province. Farmers trusted the initial supporters of their plan but not the province, and even less the central government – which they associated with paralysing bureaucracy and an arrogant top-down style of interfering with local interests. Gradually local trust in the province increased, especially after it became more active in negotiating and cooperating with the inhabitants. Making this cooperation run more smoothly and solving emerging issues were time-consuming processes. Gradually the attitude of the province shifted from risk avoidance and sticking to the rules towards taking initiatives. From 2006 a new project manager invested much energy in communication with, and more active facilitation of, the farmers in decision-making on staying or leaving and in their property transactions. Major stumbling blocks were the inflexible regulatory environment which hampered experimentation, and the difficult negotiations with the farmers who mostly supported the project but also had to negotiate a positive result for their enterprises.

The farmers used various strategies in their negotiations with the province. They formed an alliance with the province, based on their largely shared interests. Many issues between them were discussed informally. Generally the farmers, their advisor, the

<sup>24</sup> Interview vice-chairman OPIG, Waspik, 7-5-2012; provincial project manager Overdiepse polder, Den Bosch, 24-5-2012.

<sup>25</sup> Interview provincial project manager Overdiepse polder, Den Bosch, 8-4-2008. In a later interview the (then former) project manager distances himself from these earlier remarks (interview 24-5-2012). Interview vice-chairman OPIG, Waspik, 10-11-2006; 8-3-2007; 28-10-2008.

project manager and two other provincial officials prepared official meetings to accelerate the planning process. The farmers and their advisor provided the province with suggestions on farms, farming and land, and gave unsolicited advice on issues where farmers felt their knowledge was crucial. While the province took such advice into account where possible, the farmers accepted the final decision. A difficult issue was the functioning of the project manager. After concluding that the first project manager was an obstacle in realizing the terps plan, the farmers asked for his replacement by a more pro-active problem solver. The province then appointed a project manager who completely fulfilled the profile.

In contrast to their improving relationship with the province, farmers' relationship with the national government (*Rijkswaterstaat*) remained characterized by distrust and distance. The national government prioritized meeting its water targets in a cost-efficient way; the farmers and their interests were of secondary importance.

#### *Relationships between the central government and the province*

The national government actor involved in the project is the (former) Ministry of Public Works and Water Management, more specifically its department of *Rijkswaterstaat*, which delegated the RR process in the downstream areas to *Bureau Benedenrivieren* and from 2006 to the Project Directorate Room for the River (PDR; see note 22). Though *Rijkswaterstaat* had initially not supported the plan, it changed its attitude when support among administrators, politicians and other actors was growing under the influence of Habiforum and the Reflection Group Water.<sup>26</sup> Tensions arose, among others, about the formulation of a covenant between Noord-Brabant Province and *Rijkswaterstaat*. While, as a consequence of its reorganization, *Rijkswaterstaat* was unable to deal directly with all RR projects, the organization also feared loss of control over implementation.<sup>27</sup> This created opportunities for, but also tensions with, new stakeholders, primarily the province.<sup>28</sup>

Since 2006 PDR, representing the national government in RR project matters, determined the general project conditions and held financial control. Two problems emerged: first, the province was dependent on the inflexible form of control exerted by PDR; second, PDR wanted to co-determine rather than facilitate. This caused disputes over responsibilities that influenced important discussions about, for instance, the valuation of land and other property. The province could only move forward with buy-outs after green light from the central government. However, the latter's fear of expensive precedents for other RR projects (see [Box 1](#)) reduced the financial room for manoeuvre of the province. Farmers complained that, though they sacrificed themselves for the public good, they had to struggle for a fair deal in their negotiations; this made it hard to reach agreements. The province seriously questioned the shape “decentralized planning” had taken in practice.<sup>29</sup> Contrary to the province, which stressed the importance of flexibility, the central government stressed the need for audits and strict control procedures.<sup>30</sup> Thus, at least in the earlier planning stages, hierarchy and prescription rather than “controlled trust” ([Rijke et al., 2013](#)) characterized these

<sup>26</sup> Interview former provincial deputy of Noord-Brabant, The Hague 09-11-2005; vice-chairman OPIG, Waspik, 29-6-2007.

<sup>27</sup> Personal communication policy staff member Noord-Brabant, Den Bosch, 10-6-2008; former provincial deputy of Noord-Brabant, The Hague, 09-11-2005.

<sup>28</sup> Interview vice-chairman OPIG, Waspik, 29-6-2007; provincial project manager Overdiepse polder 28-9-2006.

<sup>29</sup> Interviews provincial project manager Overdiepse polder, Den Bosch 28-9-2006; 10-6-2008.

<sup>30</sup> Interviews provincial project manager Overdiepse polder (Den Bosch 28-9-2006), programme director RR (The Hague, 4-12-2006), River Branch Manager PDR (Utrecht, 12-7-2006).

#### Box 4: Some recommendations for similar spatial water interventions

- The specific circumstances and developments in farming households importantly influence their decision-making about the future (staying or leaving), the time they need to decide, and their negotiating strategies. Farmers also differ in their capacity to negotiate their position, priorities, expectations and plans with the project. Planning processes should – more than has been the case in the Overdiepse polder process – take this as point of departure.
- Organizations representing local stakeholders should be set up in such a way that the interests of both stayers and movers (or groups of people divided along other lines determined by an intervention) are equally represented throughout the intervention process. Planning processes should explicitly acknowledge – and allow for – the expression of disagreement, conflicting opinions and interests, and other antagonisms as a basic element in processes of intervention in the life-worlds and property of local stakeholders.
- Where flexibility and experimentation are needed (as in this case), space should be created for these by making deviation from established procedures easier. Especially in the early stages of planning in the Overdiepse polder, the lack of such space has damaged trust between parties and made negotiations more difficult.
- More explicit attention is needed to the question whether in intervention situations like the Overdiepse polder case “equal rights” also lead to “equal opportunities”, to what extent farmers are developing diverging perceptions of the relationship between rights and actual opportunities, and how to deal with this in the planning process.
- Related to the foregoing point, the relationship between the location of farm and agricultural land, and the planned location of project infrastructure was an important determinant of the strength of claims to a terp. Owners of farms located in places that were of key importance for the reconstruction of the polder had a stronger negotiating position, but were also more strongly represented in the OPIG board. These potentially different interests should be better balanced in representative bodies throughout the process.
- Though vague general objectives like “spatial quality” in principle facilitate their negotiation between various actors, such negotiations become problematic if the “localized” spatial quality objectives are largely determined by planners.

relationships. Other divisive issues between the province and the central government were, among others, the allocation of rising project costs and of the financial risks of implementation.

#### Discussion and conclusion

In this paper we have discussed the planning process in the Overdiepse polder, a spatial flood risk management project in the Dutch Room for the River programme. As these spatial solutions tend to be socially and politically sensitive, they require new forms of negotiation and cooperation and between stakeholders. The Overdiepse polder plan has become a widely known and internationally appealing representative of this new spatial flood risk management policy, and rightly so. It is well on its way of making water storage in the polder possible, while facilitating those who stay to continue and renew their farm enterprises, and those who move out to start a new enterprise. However, rather than simply declaring it a “success”, much can be learned from a more in-depth analysis of the planning process. In this final section we formulate some conclusions about the Overdiepse polder case, and add some remarks about its wider relevance. Box 4 provides short

recommendations for future interventions for spatial flood solutions in the Netherlands or elsewhere.

#### *Citizen participation and the role of the province: context and conditions of possibility*

The planning process in the Overdiepse polder is quite remarkable for the active role of governmental and non-governmental stakeholders, primarily the inhabitants and the province. Through their representative organization, the farmers have been able to carve out an important role for themselves. Their solution – the terps plan – was widely regarded as an innovative and appealing example of the new Dutch way of “living with water”. Moreover, the inhabitants successfully claimed a central place in the project organization rather than being co-opted through a “sounding-board group”, as often happens. In view of the recent technocratic and top-down history of Dutch flood risk management, these aspects of the planning process are far from self-evident. We have identified several enabling factors in the wider socio-political and institutional environment of the Overdiepse polder project that explain the emergence of specific modes of governing it.

The time-specific constellation of political and policy interests developing around the water policy domain were an absolutely crucial factor. Both farmers and province strategically used the opportunities provided by the growing policy attention to water and spatial solutions for flood security, as evidenced by the Reflection Group Water. While for reasons of capacity and capability the central government gradually had to loosen certain dimensions of its control, the province developed into a crucial governmental actor, ready to build trust with the polder inhabitants and engage into experimentation. This strengthened its legitimacy in the sensitive intervention in land tenure that formed the basis of the plan. The presence of farmers willing and capable to pull the intensive negotiations was an absolute precondition for realizing the terps plan. The same goes for the presence of a committed provincial delegate and knowledge institute Habiforum. The specific context of a small polder and a small homogeneous population with a majority interest in continuity of their land-based dairy farming activities made local organization relatively easy. The alliance between inhabitants and the province, and the importance of negotiations about land and other property, made it possible for the inhabitants to assume a key position in the planning process.

#### *Relationships between actors and practices of governing water interventions*

As explained above, we focused on practices of governing and relationships between actors rather than on assumptions about these. Our research has yielded a better understanding of such relationships and practices. First, we can conclude that the proclaimed “room for governance” was not self-evident. It was always hard-won, for the citizens as well as for the province, and had to be continually defended against the claims, priorities, and agendas of other actors. As the project was doomed to fail without the support of the inhabitants because of their land tenure, they were able to obtain a central role and had quite some nuisance power in their tough negotiations with the (provincial) government, sometimes also using the ever-present media. With the national governmental actor lacking both capacity and capability for this sensitive process, the province could wrestle from the central government a key role in the planning process. The farmers’ alliance with the province, increasingly based on trust, gave them a strong negotiating position in conflicts with the national government.

Second, like other RR projects the Overdiepse polder planning process was characterized by a diversity of more or less hierarchical styles of steering and involving citizens. Though the

birth story and image of the terps plan evoke notions of local initiative or “self-governance”, it was, in the first place, a reaction against the top-down selection of the polder as a “searching area” for water storage. Neither the farmers’ initiative nor the role of the province was easily accepted by the national government. Rather, it was swallowed by *Rijkswaterstaat* because of both internal constraints and under influence of a political-institutional environment in search of appealing water projects. However, the key objectives of the project – water level decrease and “spatial quality” – were defined by the national government. While the former was accepted by all farmers as the main rationale of the project, the latter was felt by many to have been externally imposed. One farmer even went to the highest Court of Appeal (*Raad van State*) to contest regulations for terp design related to spatial quality.

Third, the case shows that participatory approaches and citizen involvement in spatial water interventions are far from unproblematic, even in an area with a small and homogeneous population. While initially there was much solidarity against the governmental threat from outside, gradually issues like staying or moving, buy-outs, equal rights versus different position, land reallocation, and the role of OPIG divided the inhabitants. Positioned differently and with different capacities to envision a future in or outside the polder, farmers had their own strategies, varying between seizing the opportunity and postponing a decision, between cooperation and avoidance or resistance, between friendly and hostile negotiations – often changing through time. Idealistic assumptions about local consensual participation are belied by the field evidence. Farmer practices of strategizing their way through the planning process show the important role of the micro-politics of stakeholder involvement – full of disagreement, contestation and conflict (Few et al., 2007). This was stimulated, of course, by the fact that part of the population simply *had* to leave the polder, turning farming families into potential competitors for a terp. Each farmer family had to fend for itself in its buy-out and resettlement negotiations with the province. In these processes, an open, cooperative and compliant attitude was, quite understandably, not always seen as a benefit.

#### *Scientific and policy claims about new modes of governance*

When compared to actual practices of governing spatial flood solutions in the Overdiepse polder, generalized claims about “room for governance” (Room for the River, 2012b) or radically new modes of governance (“self-governance”; “transition”, see e.g., van der Brugge et al., 2005) suggesting “deep” institutional changes (Wiering and Arts, 2006) are not warranted. Our findings for the Overdiepse polder corroborate research findings for other RR projects (and also “calamity polders”). They point to the context-specific development of a diversity of practices of governing, varying between more or less securitized and top-down, and showing a variety of stronger or weaker participatory approaches, often changing through time in problematic interaction with more technical-managerial styles of decision-making that influence day-to-day relationships between actors and intervention practices during the planning process.

The kind of citizen involvement that we have analyzed for the Overdiepse polder case, emerging under specific socio-political and institutional conditions, can be conducive to a greater and constructive role for local and regional, private and governmental stakeholders. Notwithstanding its many problematic dimensions, it can build trust and create legitimacy for implementing government agencies. The role of the province provides a clear example here. However, it should not be idealized as “self-governance” or assumed to be part of a unidirectional change in water interventions towards participatory processes of “co-creation”. The character and quality of the relationships and practices that are

developing during such interventions can never be assumed. That is why in-depth case study-based research on spatial flood risk management interventions will remain crucial in the future.

#### *Relevance for flood risk management interventions in the Netherlands and abroad*

In view of wider trends towards spatial flood risk management to deal with changing river hydrologies, climate change, and socio-economic changes in and beyond river landscapes, solutions of the “room for the river” type will continue to play an important role in the Netherlands and elsewhere. Wherever multiple uses of land are involved and demographic-economic pressures on land resources in floodplains are increasing, spatial solutions will be highly sensitive and contested. Intervention processes will have to deal with these situations in a way that maximizes local support and legitimacy for the proposed changes. In practice this means that negotiated solutions should form the basis of such interventions. In this respect, the role of Noord-Brabant Province in the Overdiepse polder is an extremely positive example. Yet, some lessons can be still be learned. In Box 4 we give a number of recommendations for similar spatial water interventions. Many points can be related to our general observation that, even in this case, the inhabitants remained a relatively undifferentiated category of objects of intervention – mainly differentiated in terms of whether they were “cooperative” or “unruly” during the process.

It remains to be seen whether the Overdiepse polder experience will serve as a model for organizing spatial processes in future flood risk management policies and interventions in the new Delta Programme, which should protect the Netherlands against flooding from 2015, after finalization of RR (see Vink et al., 2013). First impressions of so-called “regional processes” suggest a continued problematic relationship between central government planning and local participatory processes. For countries all over the world, the Overdiepse polder case and the Dutch RR programme more generally show the relevance of rethinking flood risk management issues in a way that incorporates spatial solutions based on “living with water” and “room for the river” strategies. These experiences also show that, in order to work, such strategies require real transfers of decision-making powers and responsibilities towards local governmental and non-governmental actors, in order to create greater flexibility and facilitate adaptation to local conditions. Such processes, that turn national governmental actors into facilitators rather than decision-makers, are by definition difficult and contested.

#### **Acknowledgments**

The authors would like to thank all (former) inhabitants of the Overdiepse polder, government staff, and officials, and all others interviewed for the research on which this article is based. We also thank two anonymous reviewers for their constructive criticism and comments, from which this article has benefited.

#### **References**

- Baan, P.J.A., Klijn, F., 2004. Flood risk perception and implications for flood risk management in the Netherlands. *Int. J. River Basin Manage.* 2 (2), 113–122.
- Boezeman, D., Vink, M., Leroy, P., 2013. The Dutch Delta Committee as a boundary organization. *Environ. Sci. Policy* 27, 162–171.
- Bose, P., Arts, B., Van Dijk, H., 2012. Forest governmentality: a genealogy of subject-making of forest-dependent “scheduled tribes” in India. *Land Use Policy* 29, 664–673.
- Cleaver, F., 1999. Paradoxes of participation: questioning participatory approaches to development. *J. Int. Dev.* 11, 597–612.
- Cornwall, A., Coelho, V.S.P. (Eds.), 2007. *Spaces for Change?* Zed Books, London.
- Cuny, F.C., 1991. Living with floods. Alternatives for riverine flood mitigation. *Land Use Policy* 8 (4), 331–342.

- de Vries, J., Wolsink, M., 2009. Making space for water: spatial planning and water management in the Netherlands. In: Davoudi, S., Crawford, J., Mehmood, A. (Eds.), *Planning for Climate Change. Strategies for Mitigation and Adaptation for Spatial Planners*. Earthscan, London, pp. 191–204.
- Disco, C., 2002. Remaking “nature”: the ecological turn in Dutch water management. *Science, Technology and Human Values* 27 (2), 206–235.
- Warner, J., de Groot, W.T., 2011. Joint river planning: striking a balance between justifiable technocracy, desired collaboration and unavoidable conflict. In: de Groot, W.T., Warner, J., Smits, A.J.M. (Eds.), *The Social Side of River Management*. Nova Science Publishers Inc., New York, pp. 129–147.
- Edelenbos, J., Roth, D., Winnubst, M., 2013. Dealing with uncertainties in the Dutch Room for the River programme: a comparison between the Overdiep polder and Noordwaard. In: Warner, J.F., Van Buuren, A., Edelenbos, J. (Eds.), *Making Space for the River: Governance Experiences with Multifunctional River Flood Management in the US and Europe*. IWA Publishing, London, pp. 51–62.
- Faysse, N., 2006. Troubles on the way: an analysis of the challenges faced by multi-stakeholder platforms. *Nat. Resour. Forum* 30, 219–229.
- Few, R., Brown, K., Tompkins, E.L., 2007. Public participation and climate change adaptation: avoiding the illusion of inclusion. *Clim. Policy* 7 (1), 46–59.
- Gaventa, J., 2006. Finding the spaces for change: a power analysis. *IDS Bull.* 37 (6), 23–33.
- Habiforum, 2003. *Spiegelproject Overdiepse Polder. Rapportage Verkenning, Habiforum*, Gouda.
- Hartmann, T., 2013a. Contesting land policies for space for rivers – rational, viable, and clumsy floodplain management. *J. Flood Risk Manage.* 4, 165–175.
- Hartmann, T., 2013b. Land policy for German rivers: making space for the rivers. In: Warner, J., Van Buuren, A., Edelenbos, J. (Eds.), *Making Space for the River. Governance Experiences with Multifunctional River Flood Management in the US and Europe*. IWA Publishing, London, pp. 121–133.
- Hartmann, T., Driessen, P., 2013. The flood risk management plan: towards spatial water governance. *J. Flood Risk Manage.*, DOI: 10.1111/jfr3.12077.
- Johnson, C.L., Priest, S.J., 2008. Flood risk management in England: a changing landscape of risk responsibility? *Water Resour. Dev.* 24 (4), 513–525.
- Kabat, P., Vellinga, P., Aerts, J., Veraart, J., van Vierssen, W., 2005. Climate proofing The Netherlands. *Nature* 438, 283–284.
- Klijn, F., Bruin, D., de de Hoog, M.C., Jansen, S., Sijmons, D.F., 2013. Design quality of room-for-the-river measures in the Netherlands: role and assessment of the quality team (Q-team). *Int. J. River Basin Manage.* 11 (3), 287–299.
- Lintsens, H., 2002. Two centuries of central water management in the Netherlands. *Technol. Cult.* 43 (3), 549–568.
- Long, N., van der Ploeg, J.D., 1989. Demythologizing Planned Intervention: An Actor Perspective. *Sociologia Ruralis* XXIX – 3/4.
- Michel, A., 2011. Innovations in democratic governance: how does citizen participation contribute to a better democracy? *Int. Rev. Adm. Sci.* 77 (2), 275–293.
- Ministry of Infrastructure and the Environment, Programme Directorate Room for the River, 2012a. Room for the River. Safety for Four Million People in the Dutch Delta, <http://www.ruimtevoorderivier.nl/meta-navigatie/english/publications/>
- Ministry of Infrastructure and the Environment, 2012b. Making room for the Dutch approach. Corporate brochure Directorate-General for Public Works and Water Management, [http://www.ruimtevoorderivier.nl/media/82838/factsheet\\_making\\_room\\_for\\_the\\_dutch\\_approach.pdf](http://www.ruimtevoorderivier.nl/media/82838/factsheet_making_room_for_the_dutch_approach.pdf).
- Ministry of Infrastructure and the Environment, Programme Directorate Room for the River, 2012c. Making Room for Governance, [http://www.ruimtevoorderivier.nl/media/82841/factsheet\\_making\\_room\\_for\\_governance.pdf](http://www.ruimtevoorderivier.nl/media/82841/factsheet_making_room_for_governance.pdf)
- Ministry of Transport, Public Works and Water Management, 2006. *Spatial Planning Key Decision Room for the River. Approved Decision*.
- Morrison, K., 2003. Stakeholder involvement in water management. *Water Sci. Technol.* 47 (6), 43–51.
- Moss, T., 2004. The governance of land use in river basins: prospects for overcoming problems of institutional interplay with the EU Water Framework Directive. *Land Use Policy* 21, 85–94.
- Moss, T., Monstadt, J. (Eds.), 2008. *Restoring Floodplains in Europe. Policy Contexts and Project Experiences*. IWA Publishing, London.
- Mosse, D., 2001. “People’s knowledge” participation and patronage: operations and representations in rural development. In: Cook, B., Kothari, U. (Eds.), *Participation: The New Tyranny?* Zed Press, London, pp. 16–35.
- Mosse, D., 2004. Is good policy unimplementable? Reflections on the ethnography of aid policy and practice. *Dev. Change* 35 (4), 639–671.
- Netherlands Environmental Assessment Agency, 2010. Correction Wording Flood Risks for the Netherlands in IPCC Report, <http://www.pbl.nl/en/dossiers/Climatechange/content/correction-wording-flood-risks>
- Netherlands Environmental Assessment Agency, 2004. Dutch Dikes, and Risk Hikes. A Thematic Policy Evaluation of Risks of Flooding in the Netherlands – Extended Summary. National Institute for Public Health and the Environment, Bilthoven, The Netherlands.
- Neuvel, J.M.M., van den Brink, A., 2009. Flood risk management in Dutch local spatial planning practices. *J. Environ. Plan. Manage.* 52 (7), 865–880.
- Neuvel, J.M.M., van der Knaap, W., 2010. A Spatial planning perspective for measures concerning flood risk management. *Int. J. Water Resour. Dev.* 26 (2), 283–296.
- Pollitt, C., Hupe, P., 2011. Talking about government. The role of magic concepts. *Public Manage. Rev.* 13 (5), 641–658.
- Province of Noord-Brabant, 2006. *Overdiepse Polder. River Expansion Project Along the Maas in the Netherlands*. Province of Noord-Brabant.
- Reed, M.S., 2008. Stakeholder participation for environmental management: a literature review. *Biol. Conserv.* 141, 2417–2431.
- Rijke, J., van Herk, S., Zevenbergen, C., Ashley, R., 2013. Room for the River: delivering integrated river basin management in the Netherlands. *Int. J. River Basin Manage.* 10 (4), 369–382.
- Rittel, H.W.J., Webber, M.M., 1973. Dilemmas in a general theory of planning. *Policy Sci.* 4, 155–169.
- Room for the River, 2012a. *safety for Four Million People in the Dutch Delta*. Corporate Brochure Directorate-General for Public Works and Water Management, <http://www.ruimtevoorderivier.nl/meta-navigatie/english/room-for-the-river-programme/>
- 2012b. *Room for Governance*. Corporate Brochure Directorate-General for Public Works and Water Management, [http://www.ruimtevoorderivier.nl/media/82841/factsheet\\_making\\_room\\_for\\_governance.pdf](http://www.ruimtevoorderivier.nl/media/82841/factsheet_making_room_for_governance.pdf)
- Roth, D., Warner, J., 2007. Flood risk, uncertainty and changing river protection policy in The Netherlands: the case of “calamity polders”. *Tijdschr. Econ. Soc. Geogr.* 98 (4), 519–525.
- Roth, D., Warner, J., 2009. Rural solutions for threats to urban areas: the contest over calamity polders. *Built Environ.* 35 (4), 545–562.
- Roth, D., Winnubst, M., 2009. Reconstructing the polder: negotiating property rights and “blue functions” for land. *Int. J. Agric. Resour. Govern. Ecol.* 8 (1), 37–56.
- Rouillard, J.J., Reeves, A.D., Heal, K.V., Ball, T., 2014. The role of public participation in encouraging changes in rural land use to reduce flood risk. *Land Use Policy* 38, 637–645.
- Samuels, P., Klijn, F., Dijkman, J., 2006. An analysis of the current practice of policies on river flood risk management in different countries. *Irrigation Drain.* 55, S141–S150.
- Schut, M., Leeuwis, C., van Paassen, A., 2010. Room for the River: room for research? The case of depoldering De Noordwaard, the Netherlands. *Sci. Pub. Policy* 37 (8), 611–627.
- Shore, C., Wright, S., Però, D., 2011. *Policy worlds. Anthropology and the analysis of contemporary power*. Berghahn Books.
- van Buuren, A., Klijn, E.H., Edelenbos, J., 2011. Democratic legitimacy of new forms of water management in the Netherlands. *Int. J. Water Resour. Dev.* 28 (4), 629–645.
- van der Arend, S., Behagel, J., 2011. What participants do. A practice based approach to public participation in two policy fields. *Crit. Policy Stud.* 5 (2), 169–186.
- van der Brugge, R., Rotmans, J., Loorbach, D., 2005. The transition in Dutch water management. *Reg. Environ. Change* 5, 164–176.
- van Eeten, M.J.G., 1999. Dialogues of the deaf. Defining new agendas for environmental deadlocks. *Eburon*, Delft.
- van der Ham, W., Heersens en beheersens, 1999. *Rijkswaterstaat in de twintigste eeuw*. Europese Bibliotheek, Zaltbommel.
- van Heezik, A., 2008. *Battle Over the Rivers. Two Hundred Years of River Policy in the Netherlands*. Ministry of Transport, Public Works, and Water Management, Haarlem and The Hague.
- van Stokkom, H.T.C., Witter, J.V., 2008. Implementing integrated flood risk and land-use management strategies in developed deltaic regions, exemplified by The Netherlands. *Int. J. River Basin Manage.* 6 (4), 331–338.
- Verkerk, J., van Buuren, A., 2013. Space for the river: a condensed state of the art. In: Warner, J.F., van Buuren, A., Edelenbos, J. (Eds.), *Making Space for the River. Governance Experiences with Multifunctional River Flood Management in the US and Europe*. IWA Publishing, London, pp. 15–32.
- Vink, M.J., Boezeman, D., Dewulf, A., Termeer, C.J.A.M., 2013. Changing climate, changing frames. Dutch water policy frame developments in the context of a rise and fall of attention to climate change. *Environ. Sci. Policy* 30, 90–101.
- Warner, J. (Ed.), 2007. *Multi-Stakeholder Platforms for Integrated Water Management*. Ashgate, Aldershot.
- Warner, J., 2011. *Flood Planning: The Politics of Water Security*. I.B. Tauris, London.
- Warner, J., Winnubst, M., Roth, D., 2011. Space for the river, space for citizens? Planning the Ooij and Overdiep polders The Netherlands. In: de Groot, W.T., Warner, J., Smits, A.J.M. (Eds.), *The Social Side of River Management*. Nova Science Publishers Inc., New York, pp. 97–111.
- Warner, J., Edelenbos, J., van Buuren, A., 2013a. Making space for the river: governance challenges. In: Warner, J.F., van Buuren, A., Edelenbos, J. (Eds.), *Making Space for the River. Governance Experiences with Multifunctional River Flood Management in the US and Europe*. IWA Publishing, London, pp. 1–13.
- Warner, J.F., van Buuren, A., Edelenbos, J. (Eds.), 2013b. *Making Space for the River. Governance Experiences with Multifunctional River Flood Management in the US and Europe*. IWA Publishing, London.
- Wiering, M.A., Arts, B.J.M., 2006. Discursive shifts in Dutch river management: “deep” institutional change or adaptation strategy? *Hydrobiologia* 56 (5), 327–338.
- Wiering, M.A., Driessen, P.P.J., 2001. Beyond the art of diking: interactive policy on river management in The Netherlands. *Water Policy* 3, 283–296.
- Winnubst, M., (PhD Dissertation) 2011. *Turbulent Waters. Cross-Scale Conflict and Collaboration in River Landscape Planning*. Radboud Universiteit Nijmegen.
- Wolsink, M., 2006. River basin approach and integrated water management: governance pitfalls for the Dutch space-water-adjustment management principle. *Geoforum* 37, 473–487.
- Wolsink, M., 2010. Contested environmental policy infrastructure: socio-political acceptance of renewable energy, water, and waste facilities. *Environ. Impact Assess. Rev.* 30, 302–311.