

Assessing governance context to increase drought resilience: The case of the Drents-Friese Wold National Park

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The paper explores the connection between governance and the resilience of the Drents-Friese Wold National Park in the Netherlands. We assess the governance context that affects the implementation of measures to increase drought resilience in the Park. The Oude Willem area restoration project within the Park is studied more explicitly as one of the measures applied towards managing an area eroded due to long agricultural land use. The focus is on the governance context and process under which measures are taken rather than on the results of the implementation of the measures. The case shows that context is changing over time as the priorities of stakeholders change from economic to nature development and vice versa, making it a complex process to implement measures. The Governance Assessment Tool is used to analyze the governance context in the restoration project. The observations signify the qualities of the governance dimensions in the process of enhancing the resilience of the area. Though the assessment reveals some weaknesses, the overall picture shows the governance context to be relatively supportive with high involvement of multilevel actors dealing with adaptive measures. The transition to a more decentralized governance system and the recognition of multi-level/scale approach, as a response to changes, has created a new context for the protected area management.

Keywords: Governance, Drought resilience, Adaptive measures, National park, Climate change

1. Introduction

Concerns about the resilience of ecosystems to climate change have created significant challenges that require a change in policies and governance (Organisation for Economic Co-operation and Development, 2014). Protected areas are recognized for their ability to protect various ecosystems and to help biodiversity and people adjust to climate change. However, concrete measures to increase resilience of protected areas face

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a multiplicity of governance context conditions that can have positive or negative impacts on the feasibility of such measures. This article sheds light on how the governance context influences the feasibility of measures to increase drought resilience. To begin, the governance assessment tool (GAT) is presented and then a case study in which this tool is applied to illustrate the importance of the governance qualities for enabling the resilient regime. This sheds light on the importance of the governance and resilience relationship.

Many scholars acknowledge that maintaining resilience within protected areas is necessary to achieve long-term conservation goals in light of climate change impacts (Baron et al., 2009; Lebel et al., 2006; Parker & Murphy, 2013). The governance of these areas addresses various important biodiversity and social concerns in terms of decision-making and planning of the land and resource use, as well as financial and other relevant matters to the protected areas (Borrini-Feyerabend, Johnston, & Pansky, 2006; Eagles et al., 2012; Graham, Amos, & Plumptre, 2003). Smith et al. (2003) showed a firm relationship between the quality of biodiversity conservation and the quality of the governance, emphasizing an important role of governance in enhancing protected area management and the long-term sustainability of those areas. Therefore, looking at the resilience of protected areas through the lens of governance is a useful approach for understanding the resilience problem.

Governance is an evolving concept, especially in relation to protected areas. Scholarly literature on governance of protected areas is relatively recent and limited (Balloffet & Martin, 2007; Eagles, 2008, 2009; Eagles et al., 2012; Hannah, 2006; Lockwood, 2010). We address this by using the example of the Drents-Friese Wold National Park to examine the ecological resilience of the area in relation to the governance arrangements for its management. The GAT is applied to better understand the governance context as it provides a systematic assessment of all relevant elements and qualities of governance. The transition from the classic top-down model of protected area governance, to the decentralized one, which is nowadays the main trend in environmental governance, is a reflection of some political, social and environmental changes creating a new context for the protected area management (Eagles et al., 2012; Lemos & Agrawal, 2006; Lockwood, 2010). However, the relationship between the decentralization of the governance and the impact of hazards has not been much addressed in the literature (Vaillancourt, 2013). Decentralization may thus have a positive and/or negative influence on the governance of protected areas. It is argued that delegating the tasks to the local level, brings nature governance closer to people. Decentralization may increase government responsiveness to local needs; however, decreased budgets that are characteristic of decentralization may cause slower implementation of resilience measures (Haasnoot, 2012).

It is also argued that engagement of multiple institutions in protected area governance can safeguard the system against failure (Borrini-Feyerabend et al., 2013), hence increasing its resilience. The recognition of new governance models, like multi-level approaches, is a response to the failure of the traditional top-down model that in some cases led to a reduction in biodiversity. This led to the opening up of protected areas' decision-making process to a wider number of stakeholders. Moreover, new economic opportunities for protected areas, such as tourism, brought new pressures to park management and

new stakeholders with evolving and complex governance systems (Bramwell & Lane, 2011; Lockwood, 2010).

1.1. Problem description

This paper addresses the problem of governance complexity in protecting significant natural areas in order to enhance the ability to increase drought resilience in those areas. This is done by contributing to the knowledge of what supportive and obstructive governance conditions look like.

In drought resilience, the concept of water scarcity and drought are considered as different matters: “water scarcity, referring to the average water imbalances between supply and demand, whereas droughts, as natural phenomenon referring to natural deviation from the average levels of natural water availability” (European Commission, 2007). In the Netherlands, drought resilience refers to both the supply and demand of water that is of sufficiently good quality. Water shortages during the summer are a common phenomenon in the Netherlands. Terrestrial ecosystems may be affected by low ground water levels and are vulnerable to droughts, as they are adapted to man-made conditions. The impact of droughts on more natural ecosystems would be less severe than in the present situation (Centre for Climate Adaptation, 2015).

Nature has suffered considerable losses in the Netherlands. High population density resulted in sacrificing nature areas for agriculture, housing, roads and industry. In the 1990s the new Dutch nature policy adopted a concept of ‘nature development’ that is regarded as ecological restoration. Previously, nature policy in the Netherlands had mainly focused on nature preservation (Verduijn, Ploegmakers, Meijerink, & Leroy, 2015). In 1969 the Netherlands joined the IUCN and assured the protection of important ecosystems by establishing National Parks (Ministry of Agriculture, Nature and Food Quality, 2005).

The case of this paper is related to the Oude Willem area within the Drents-Friese Wold National Park, which is one of the largest coherent nature reserves in the North-East of the Netherlands, and the second largest area of woodland and heathland in the Netherlands. The landscape of the Drents-Friese Wold has been eroded over several centuries of human activity. The forests were cut, and agriculture intensified which led to nutrient poor soils, wind erosion and sand dunes. This resulted in a new landscape that is culturally valued and distinct, however it also resulted in a decreased resilience of the area making ecosystems and their services more vulnerable to climate change.

1.2. Objective and research questions

The objective is to assess whether the governance context of the Drents-Friese Wold National Park supports or hinders the implementation of measures to increase drought resilience in the Park. The use of GAT in relation to resilience helps to identify factors for establishing better ecological resilience within the governance context. It allows us to explore and explain how governance of the study area is realized through the governance arrangements. The Oude Willem area restoration project is examined as one of the primary measures for managing the eroded area and to increase the resilience of the Park.

The research questions addressed are: 1) what is the present situation in the Drent-Friese Wold National Park in terms of the drought resilience, and what threats are currently observed? 2) What measures are applied to increase resilience of the Park? What difficulties have been observed in the implementation process? 3) What governance factors support or obstruct implementation of such measures?

Addressing those questions will help to draw links to the broader concerns in the literature related to the resilience, adaptive measures and the governance of protected areas, showing their relationship and reflecting the reality of governance in a highly complex context. This will contribute to better understanding of the governance context conditions that influences the feasibility of measures in an effort to foster drought resilient.

Moreover, the objective and research questions will provide insight into the governance of resilience of the studied area by exploring how the governance context has changed over time in terms of priorities of actors (determined by the processes of institutional arrangement), and the ways in which decisions are made (Borrini-Feyerabend et al., 2006; Graham et al., 2003). They provide the means to display a logical connection between more conceptual governance frameworks and ideas, concrete adaptive implementation actions and measurable resilience results.

In the following *section 2* the research framework and the relevance of the GAT for resilience is outlined. In *section 3* the methodology is presented. Further, in *section 4* the case of the Drents-Friese Wold National Park and Oude Willem area are explored in terms of the ecological and institutional background, and measures implemented, elaborating on the Oude Willem restoration project as one of the applied measures. Findings and analyses are presented in *section 5* elaborating on the resilience state of the Park and on national policy context. The first and the second research questions are addressed in this section. Observations in the framework of GAT regarding the Oude Willem restoration project and analyses of the GAT application are also presented in this section and the last research question is addressed. Discussion and conclusions are drawn in the last *section 6*.

2. Research framework

The study is presented in the frame of three main concepts: (1) resilience, as a capacity of nature areas to serve as a basis for human and ecosystem services and their vulnerability to climate conditions; (2) adaptive measures, to enhance the resilience of nature areas; and (3) governance, as an actor interaction process and as a context that influences this process. Though the governance context and process are seen as related, they are separated to be able to study the impact of the governance conditions on the process. The GAT (Bressers et al., 2013) helps the analysis as it is targeted specifically at assessing the governance context.

(1) The concept of resilience has been interpreted in various fields of study (Carpenter, Walker, Anderies, & Abel, 2001; Djalante, Holley, & Thomalla, 2011; Folke et al., 2010; Lebel et al., 2006; Walker & Salt, 2006). Originally, it was developed in the field of ecology (Holling, 1973), and defined as the amount of disturbance that an ecosystem could tolerate

without changing self-organized processes and structures, maintaining the same function. The ecological approach to the concept of resilience has more recently been applied to policy as well. Enhancing the resilience of ecosystem services require specific governance and management policies (Biggs et al., 2012). Various studies have pointed out the importance of participation and collaboration of different stakeholders at different stages of the planning and management of stresses (Berke, Kartez, & Wenger, 1993; Tran, Shaw, Chantry, & Norton, 2009; Warner, 2008; Warner, Waalewijn, & Hilhost, 2002). Thus, resilience can be viewed as a process that includes the involvement of multilevel governance actors focusing on common problems with the capacity to adapt and influence resilience.

(2) Adaptive measures cover a wide range of ecosystem management activities, such as establishing and managing protected areas, or restoring degraded lands that can increase the resilience to droughts and floods (Colls, Ash, & Ikkala, 2009). In this paper, the restoration of the degraded agricultural land within the National Park is observed as one of the measures for restoring the natural condition of the area and to increase the drought resilience of the Park.

(3) Like resilience, the concept of governance has a broad variety of meanings and definitions (De Boer, et al., 2013). The characteristics of governance, such as participation and collaboration of the multilayered institutions and networks that are mentioned in the literature, relate to understanding the interlinkages of adaptive governance and increasing resilience (Djalante et al., 2011; Fung, 2006; Gunderson & Light, 2006). In this paper, governance is described as a “combination of the relevant multiplicity of responsibilities and resources, instrumental strategies, goals, actor-networks and scales that forms a context that to some degree restricts and to some degree enables actions and interactions” (Bressers, et al., 2013). The GAT elaborates a simple concept of policy with goals and means and describes all relevant aspects of the governance context. It consists of a matrix of five governance dimensions (*levels & scales, actors & networks, problem perspective & goal ambitions, strategies & instruments, and resources & responsibilities*) and four quality criteria. These five dimensions can be used to systematically describe the contents of a governance context in a certain area concerning a certain issue. The four criteria are: *extent* (considering if all relevant aspects for the concerned issue are taken into account); *coherence* (whether elements of the governance dimensions strengthen rather than contradict each other), *flexibility* (to what degree the governance regime allows and facilitates multiple adaptive strategies/goals) and *intensity* (how intensely do the elements of the governance context urge and support changes in current developments) (Bressers & Kuks, 2004).

Generally, governance approaches mix elements of descriptive and normative nature. The approach taken in this study separates the descriptive (the five dimensions of governance) and normative aspects (the four criteria) of governance. Furthermore, the approach derives the normative criteria from a specific goal, namely the feasibility and likelihood of realization of a certain category of measures or projects, in this case the promotion of drought resilience. Moreover, our approach makes a clear separation between the conditions and the activities. In many approaches ‘governance’ is used for both the process and the context conditions for the process; in this approach ‘governance’ concerns only the context.

2.1. Relevance of the GAT for enabling resilience

The qualities and dimensions of governance show the interactions of multi-level actors through the processes and actions that influence the context in which those actors make decisions to enable resilient governance for protected areas. According to the resilience principles (Biggs et al., 2012), active participation of all relevant stakeholders or promotion of polycentric governance to achieve collective actions in the face of disturbance or change, are considered fundamental in building trust and relationships during decision making processes that help to build resilience. Additionally, the resilience literature recognizes the multi-scale and multi-component nature of resilience (Berkes & Folke, 1998; Carpenter et al., 2001; Resilience Alliance, 2014). Therefore, the framework proposed to assess resilience allows for integrating this multi-component nature of resilience (Béné, 2013). Since resilience principles are interlinked with the governance attributes, GAT is an appropriate analytical tool for understanding governance for resilience.

3. Methodology

The case study methodology used in this research is well suited to answer the research questions. “It is based on direct observations, documents and systematic interviewing” having in mind that the focus and interactions around the research are in a real-life context surrounding a contemporary phenomenon (Yin, 2003). The questions addressed are “what” oriented, yet they have no control over the events and focus on current actions. Although they are exploratory by nature they are explanatory as well in terms of how and why multiple actors interact to provide in-depth understanding and insight concerning their behaviour towards reaching the goals. The unit of analyses is the restoration project within the studied area that aims at increasing resilience. The processes and interactions of actors, involved in the implementation of the adaptive measures for better resilience, are assessed.

The relationship between the results of the GAT and resilience has not previously been explored. This paper investigates whether the GAT can contribute to the governance assessment process for enhancing the resilience of nature areas. The ranking of *high*, *medium* and *low* is used when the governance context is assessed according to the qualities and dimensions of the GAT. These judgments were made through discussions between at least two observers to prevent that the assessment overlooks important aspects (Bressers, et al., 2013).

The evaluative questions of the GAT that cover the governance qualities and dimensions (Table 1) were asked during in-depth interviews with representatives of the main stakeholder organisations who are directly involved in the case study: the Province of Drenthe (involved in developing specific regulations for the Park and as a partial¹ funder of the Oude Willem project); Statsbosbeheer² (responsible for maintaining vitality of ecosystems for nature and people); Water Board ‘Reest en Wieden’ (the main water

¹The other part is provided by the Province of Friesland

²National Forest Service

Table 1
Evaluative questions of the GAT (Bressers, et al., 2013)

Governance dimensions	Qualities of the governance context			
	Extent	Coherence	Flexibility	Intensity
Levels & scales	How many levels are involved and dealing with an issue? Are there any important gaps or missing levels?	Do these levels work together and do they trust each other between levels? To what degree is the mutual dependence among levels recognized?	Is it possible to move up and down levels (up scaling and downscaling) given the issue at stake?	Is there a strong impact from a certain level towards behavioral change or management reform?
Actors & networks	Are all relevant stakeholders involved? Are there any excluded ones?	What is the strength of interactions between stakeholders? Do the stakeholders have experience in working together? Do they trust and respect each other?	Is it possible that new actors are included or even that the lead shifts from one actor to another when there are pragmatic reasons for this? Do the actors share and support each other's tasks?	Is there a strong pressure from an actor or actor coalition towards behavioral change or management reform?
Problem perspectives & goal ambitions	To what extent are the various problem perspectives taken into account?	To what extent do the various perspectives and goals support each other, or are they in competition or conflict?	Are there opportunities to re-assess goals? Can multiple goals be optimized in package deals?	How different are the goal ambitions from the status quo or business as usual?
Strategies & instruments	What types of instruments are included in the policy strategy? Are there any excluded types? Are monitoring and enforcement instruments included?	To what extent is the incentive system based on synergy? Are trade-offs in cost benefits and distributional effects considered? Are there any overlaps or conflicts of incentives created by the included policy instruments?	Are there opportunities to combine or make use of different types of instruments? Is there a choice?	What is the implied behavioral deviation from current practice and how strongly do the instruments require and enforce this?
Responsibilities & resources	Are all responsibilities clearly assigned and facilitated with resources?	To what extent do the assigned responsibilities create competence struggles or cooperation within or across institutions? Are they considered legitimate by the main stakeholders?	To what extent is it possible to pool the assigned responsibilities and resources as long as accountability and transparency are not compromised?	Is the amount of allocated resources sufficient to implement the measures needed for the intended change?

managers); the Dienst Landelijk Gebied³ (DLG, coordinator of the Oude Willem project); and Instituut voor natuureducatie en duurzaamheid⁴ (IVN, responsible for education about nature, environment and landscape). For data collection, a combination of methods has been used. The conceptual data have been obtained from the academic literature and from the reports and documents published by organisations involved in the case study. Reliable internet sources have been utilized; keywords, including ‘resilience, protected areas, governance and resilience, governance of protected areas’ have been used in the search for secondary literature. Moreover, data has been collected during the ‘Case study course’⁵ (2014) alongside Master students in the frame of the Master in Environmental and Energy Management program at the University of Twente in the Netherlands. Interview transcripts and notes have been relied upon for the analyses.

4. Case study

4.1. *Ecological background*

The Drents-Friese Wold is a National Park (since 2000) that stretches over the borders of the Provinces of Drenthe and Friesland and covers more than 61 km². Historically, the area was mainly utilized for agriculture, sheep grazing and forestry. Currently, the park consists of forests, heath lands and sand drifts and its characteristics are strongly influenced by the ‘esdorp culture’⁶ which originated in the Middle Ages (Drents-Friese Wold National Park, 2014).

Dutch land-use changes over time have shown forests disappearing in favour of fields and heathlands. Only some small fragmented area of forests remained and only recently have some areas been reforested. Peat from the heath was mixed with manure to improve the fertility of the fields. After introducing artificial fertilizers, grazing on the heath lands became less necessary, and led farmers to more intensively drain the whole area for other agricultural uses. Due to these agricultural activities the Drents-Friese Wold began to face serious problems with regard to drought and soil eutrophication (The Global Partnership on Forest and Landscape Restoration, 2013). The Vledder Aa and the Tilgrup, the two streams and the grasslands associated with them, traditionally formed the heart of Drents-Friese Wold landscape. However, in the previous century most of the Vledder Aa and its branch the Tilgrup were canalized and ditches were cut in the grassland to intensify agriculture. In addition, during the dry summers eutrophic water from the River IJssel was let into the area. The hydrological management of the district was directed entirely at effective drainage.

The long term use of the Oude Willem for agriculture (Bos & de Vries, 2013) led the area to be deforested and drained by stream canalization, completely altering the hydrology

³ Government Service for Land and Water Management under the Ministry of Economic Affairs

⁴ Institute for Nature Education and Sustainability

⁵ Course - Water Governance and Sustainable Resource Management; the topic of ‘Governance Assessment in the case of the Oude Willem Development regarding the long-term provision of ecosystem services’

⁶ villages with farms centered around a square or church, surrounded by fields on the inside m



Figure 1 The Case study area⁷, striped area is Oude Willem

of the area and its wider surroundings. Since the Drents-Friese Wold area has become a National Park, the Oude Willem has been designated as a future nature development area, under the Netherlands' National Nature Policy. The National Park is one of the appointed areas to the National Ecological Network (EHS)⁸ and functions as a corridor for animals.

4.2. Institutional background and goals

Main stakeholders involved in the ownership and management of the National Park have different perspectives towards the goals of the Park (Table 2). The National Park has an advisory committee represented by Staatsbosbeheer, Natuurmonumenten, Drents Landschap and Maatschappij van Weldadigheid. Together with other stakeholders they

⁷http://nl.wikipedia.org/wiki/Nationaal_Park_Drents-Friese_Wold; the photo is licensed under the Creative Commons Attribution-ShareAlike 2.0 license (CC-BY-SA 2.0) and is free to copy and share

⁸EHS (Ecological Hoofdstructuur)-ecological corridors connecting important nature areas in the Netherlands were introduced in 1990 by the National Nature Policy Plan

Table 2

The ownership and management of the Drenths-Friese Wold (Drents-Friese Wold National Park, 2014)

Stakeholders	Land area responsibility	Management approach
Staatsbosbeheer (National Forest Service)- Owns/manages the largest part- 4150 hectare of the Park	Ecological integrity, but also accepts recreation that suits the area;	Maintenance of the park (cutting trees); maintenance of the dolmen and pathways; making recreation accessible, creating scenic view throughout the forest; making parts of the area open for public
Natuurmonumenten (Nature Monuments)- Owns/manages 950 hectares	Stronger focus on ecological integrity Nature management	Prefers non-human altered natural cycles
Drents Landschap owns and manages 450 hectares	How parks fits into the overall landscape	Incorporates cultural heritage
Maatschappij van Weldadigheid (Benevolent Society) owns 200 hectares	Preservation and development of the historical heritage	Conservation through development; restoring authentic features of landscape
80 private owners manage 400 hectares	Recreation	
Water board Reest and Wieden	Responsible for hydrology of the area	Cooperates on conservation, development and design of the park.

cooperate on the conservation, development and design of the park. The involved stakeholders focus on enhancing ecological integrity, in order to reverse the processes that degraded the area and to create a diversity of animals and vegetation. The Oude Willem restoration project fits well into the overall goal of the Park and also provides functions such as recreation, cultural heritage and to a lesser extent, wood production (Li et al., 2010). Combining functions is in the best interest of all the stakeholders, however, trade-offs may take place between agriculture and nature goals. Farmers in the area prefer a low ground water table, rich soil and well levelled fields, which contradict with the nature goals of the National Park. In some special cases farmers have been involved in the maintenance of the Park.⁹

The secondary stakeholders, such as village inhabitants, use the available nature for recreational purposes.¹⁰ All recreational activities will eventually be relocated to the edge of the Park, leaving the center for 'wild' nature development.

4.3. Restoration of Oude Willem area as a measure to increase drought resilience

A restoration plan for the area was developed by the nature organization 'Natuurmonumenten' in the early 1990s. In cooperation with local and national authorities land was purchased and leased and the preconditions for restoring the river and grassland

⁹ Staatsbosbeheer has hired some farmers with cattle to graze in the Park and restore the heath land, while Natuurmonumenten and Drents Landschap own cattle themselves for this purpose.

¹⁰ About million tourists visit the Park (National Parks in the Netherlands, 2010).

ecosystem were created. However, the soil of the grassland was still heavily eutrophic and the streams were unable to perform their natural hydrological functions. In 2007, different groups of relevant stakeholders agreed to integrate the agricultural area into the National Park. The objectives of the agreement were to (1) regain as many natural processes as possible within the area, (2) recover the hydrological system, using the Oude Willem area to serve as the upper reaches of the stream Vledder Aa, (3) recovery of the natural hydrologic system as a precondition for nature development, and (4) enhance the unique wilderness in connection with recreational use and restoration of nature (Bos & de Vries, 2013). In addition the Dienst Landelijk Gebied¹¹ (2012) proposed the following measures to be taken for groundwater recharge: (1) terminating or limiting the groundwater abstraction activities in Terwisscha¹², (2) the establishment of the creek valley of the Vledder Aa's middle course, and (3) large scale shifting from conifers to deciduous trees. In their design proposal they point out that a sustainable restoration of the hydrological system is the crucial factor for turning the Oude Willem back into the healthy headwaters of the Vledder Aa stream system (Bos & de Vries, 2013).

5. Findings and analyses

5.1. Resilience of the Drents-Friese Wold

The state of resilience for the Drents-Friese Wold has been affected through several land use changes from nature to farmland. The previous phase of the re-naturalization of the Oude Willem area focused on supporting efficient agriculture rather than on nature development. Focusing on the economic interests instead of the ecology, led the Province of Drenthe, the land owner at that time, to decide to sell the natural land to the farmers within the National Park. It was not until a decade later that they realized the complications and complexity that this would cause in the re-naturalization process. When Oude Willem began to be realized, the focus on nature and its values were primary and were enabled via subsidies. Currently the economic issues are becoming more prominent. Stakeholders now need to find new ways to enable future investments for nature development, because governments have retracted previous funding mechanisms. The cyclic nature of the discussion regarding how to balance economic and nature needs shows the importance of interlinking the ecosystem services with economics and their benefits.

A number of measures have been undertaken to restore natural hydrological system and natural conditions in the Park. To restore a more natural water environment, canals, which were used once for drainage for agricultural means, have been blocked. The straight high banks of the canals have been removed to let the streams flow more naturally and

¹¹ This organization stopped functioning in March 2015

¹² Small village in the municipality Ooststellingwerf in the Province of Friesland; It is located south of Appelscha village, where it officially belongs. In Terwisscha is the visitor center of the National Park. There is also a water pumping station of Vitens (drinking water company)

allow the stream to meander again. Moreover, to restore the wetland identity of the area, small channels have been dug. Future measures include filling in ditches and the canal to increase the water table to a level that supports recovery of the natural processes, affecting the wider watershed area as well. To support nature development, measures to be applied are the prohibition of fertilizers and pesticides in the area, change of land use from agriculture to nature development, technical measures in the stream profile restoration, gradual replacement of coniferous vegetation with deciduous, and grazing and mowing as natural heath land maintenance measures. Ecosystem services are seen rather as a consequence than as a primary aim.

5.1.1. National Policy context In the recent years, the main focus of Dutch national nature policy has been to conserve and rehabilitate nature and landscape through implementing programs such as Natura 2000 and the National Ecological Networks. Lately, this focus has shifted to include social values as well (Buijs, 2009). In 2000 the nature policy expanded to include the social values of nature (LNV, 2000) and to increase public support for long-term nature conservation. Decentralization of nature policy jurisdiction to the provinces was implemented to increase social support and bring nature policy closer to people. The provinces are now responsible for nature protection at the local level, and this is expected to be more cost effective for executing decentralized tasks compared to the national government¹³ (Haasnoot, 2012).

While decentralization is seen to be beneficial in some instances (such as in the case of national landscapes or the responsibility for the management plans for Natura 2000 sites), in other aspects it could have harmful effects, especially regarding National Parks and Natura 2000 sites. Decentralization of these internationally important resources can lead to fragmentation of international nature policy tasks and responsibilities, which can have a negative effect on Dutch nature. Also, the most important threat of decentralization comes from the lack of financial resources at the provincial level which could lead to a degradation of Dutch nature (Haasnoot, 2012). The decentralization of Dutch nature policy can be a potential threat to the Oude Willem project implementation as well.

In Table 3, the timeline of major developments of policy initiatives around the case study is presented.

5.2. Observations made in the framework of the GAT regarding Oude Willem restoration project

At the end of 2013 the Steering Committee for the Drents-Friese Wold was initiated by the Province of Drenthe. The Committee is responsible for the cooperation and communication of all parties in the region. Together with the Steering Committee, the Project

¹³Decentralization accompanied considerable budget cuts of 600 mln euros to the Investment Budget for Rural Areas (ILG- Investeringsbudget Landelijk Gebied) (Haasnoot, 2012).

Table 3
A timeline of major relevant policy developments

1990	The Dutch nature policy adopted a new policy concept of 'nature development' regarded as ecological restoration
Early 1990s	Oude Willem restoration plan was developed by Natuurmonumenten
Since 1990s	Nature policy has been undergoing decentralization
2000	The nature policy document 'People for Nature, Nature for People' expanded nature policy from an ecological focus to include the social values of nature (LNV, 2000)
2000	Drents-Friese Wold area became a National Park
2007	Agreement of stakeholders to integrate Oude Willem area into the Drents-Friese Wold
2013	Steering committee for Drents-Friese Wold is initiated by Province of Drenthe in agreement with Province of Friesland
March	DLG has been terminated as an agency; Province of Drenthe took over the leading role in the realization of the Oude Willem project
2015	

Group Oude Willem is involved in the organization and management of the restoration project, with the DLG as an official secretary of the Steering Committee. However, another result of policy decentralization in the Netherlands has been the termination of the DLG as an agency¹⁴, delegating parts of its services to the Provinces. The DLG had been a neutral stakeholder, and therefore, capable of providing a mediating role. The Province of Drenthe is now in charge of the project coordination.

The following sections are the result of the application of the GAT to the Oude Willem restoration case. The results show what governance factors may have enabled or restricted the success of the process. Evaluative questions providing the basis for the analyses of each governance component are presented in Table 1. The five dimensions presented in the next section form a descriptive model of all relevant aspects of the governance context. The results are a systematic description of the content of the governance regime with regard to the restoration project.

5.2.1. Levels and scales The governance dimension of levels and scales assessed whether all relevant levels of governance are involved in the project. The restoration of Oude Willem area operates in a context with diverse interests of multiple stakeholders, involved at different levels of authority with different perspectives and interests in the project. In the project all levels of authorities are represented ranging from the local level to the EU level.

¹⁴DLG has officially stopped functioning on March 1, 2015, transferring the majority of tasks to the Provinces and to a lesser extent to the Netherlands Enterprise Agency (Rijksdienst voor Ondernemend Nederland; <http://www.rvo.nl/>). In relation to the Drents-Friese Wold, all actions related to planning and management, are supervised by the Province of Drenthe and Prolander- the provincial organization for implementing policies in rural areas in the provinces of Drenthe and Groningen (<http://www.dienstlandelijkgebied.nl/>; <http://www.prolander.nl/>).

Table 4
Organization of the Oude Willem restoration project

DLG and now Province of Drenthe
Coordinator/secretary of the Steering Committee
Steering Committee
Responsible for the vision/Strategic planning/for cooperation of all parties
Project Group Oude Willem
Operationalizing/implementing the decisions of the Steering Committee

At the project implementation level there are two levels of authorities: the Steering Committee for the Drents-Friese Wold (consisting of the directors of the main official stakeholder organisations that are in charge of major decisions) and Project Group Oude Willem, as the project operational body, under the Steering Committee. Table 4 presents the organization of the Oude Willem restoration project.

These levels are interconnected horizontally and vertically; Provinces and municipalities can act independently on local issues but in implementation of strategic plans, such as National Nature Policy, the decisions are made at higher national administrative levels. Water authorities are in charge of all water related issues, and are relatively independent of other levels. On the project level, there is clear vertical interaction between the Steering Committee and Project Group Oude Willem. High level decisions are made by the Steering Committee. Dependences are fully recognized between administrative and project levels and there is a strong commitment of all levels involved.

5.2.2. Actors and networks This dimension assessed the multi-actor involvement in the project. Table 5 presents the formal and informal involvement of multiple actors in the restoration project, each with its own roles and responsibilities.

Stakeholders interact and cooperate on all relevant matters in the frame of the Steering Committee (2-3 meetings/year) and also in the frame of the Project Group Oude Willem (with monthly meetings), which is less formal and more flexible setting. New actors can be involved and there is no pressure from the managing actors towards management reform, which means that they are strongly committed to the project implementation.

The informal actors have more passive and indirect roles. They were involved in the decision making process related to project planning through the Dutch polder model¹⁵ and Sketch&Match¹⁶ methods, but do not have a direct influence on project implementation and management. The mentioned polder model is applied to facilitate participation of a wide range of actors through consultations with the local community. Farmers, as affected actors, were negotiated with and agreements were made to buy their land. One remaining farmer is still reluctant to sell his property, though the negotiation process is still ongoing.

¹⁵Consensus model in which different actors sit down to negotiate to come to a decision

¹⁶Method, through which people are invited to work on idea developments from the very beginning of plan drafting

Table 5
Stakeholders in the Oude Willem restoration project

Formal stakeholders	Roles and responsibilities
National authorities	As general supporting stakeholders providing funding for implementation of Dutch Nature Policy plan and allocating resources to provincial governments
Province of Drenthe	Regional authority/providers of majority of financial resources
Province of Friesland	In charge of developing local nature policies/spatial development plans, and other instruments to implement National Nature Policy As land owners they designate the land managers to specific projects, allocating funds from National budget Since 2015 province of Drenthe is a coordinator of the Oude Willem project, after the termination of DLG
Municipality Westervel	Local authorities/provider of part of financial resources They ensure that the interests of the local community are taken into account in decision making process
Municipality Ooststellingwerf Waterschap Reest & Wieden	Main water managers, providers of financial resources
Weterskip Fryslân	Responsible for hydrology of the area, as owners of the water body such as Tilstrup, they are responsible for the maintenance of the water system, water table after the completion of the restoration project. Most of the area is under jurisdiction of Waterschap Reest en Weiden
Recreatieschap Drenthe	Advisor to municipalities and province/s, and to informal actors, such as recreation entrepreneurs, plan developers, field coordinators, etc. on all matters related to recreation and tourism
Staatsbosbeheer	Manages land/nature elements of the Oude Willem area; responsible for maintaining the vitality of ecosystems for nature and people; runs one camping site within the Park, is involved in a capacity of recreational business owners
Natuurmonumenten Drents-Friese Wold NP DLG	Responsible of nature management in the Drents-Friese Wold Park manager Mediator, coordinator and project leader, involved in the development of draft plans, communication with stakeholders and coordination of various aspects of the project; leading negotiator in farmland acquisitions
<hr/>	
Informal stakeholder	
Local inhabitants	Enjoying the nature of the Park
Farmers	One farm is privately owned, others are owned by Province of Drenthe and are temporarily rented
Local entrepreneurs	Run their businesses in connection to tourism/recreation; do not participate in project implementation
Park visitors	Visit park for various reasons, expect different services from the area; after the realization of the Oude Willem more visitors are expected

5.2.3. Problem perceptions and goal ambitions This dimension assumes a multi-aspect character of problem perception and goal ambitions and thus assessed various goals and perspectives of the involved stakeholders. The current focus of the restoration is on nature development, however there are some contradictory goals integrated within the project. On the one hand, nature development and the goals of Natura 2000 (ecological goals)

are pursued and, on the other hand, development of Dutch cultural landscape are desired which includes certain human activities, which inhibit nature as well. The Dutch cultural landscape was developed by the strong influence of traditional agriculture. Nature preservation then would entail restoration of habitats and landscapes such as heath, grasslands and ditches (Verduijn et al., 2015).

Other (inter)nationally relevant goals include drought resilience, reducing flood risks, improving recreation and tourism for local economy, and protection of biodiversity (Natura 2000, 2014). Due to long standing agricultural uses, there is an excess of phosphate content in the soil. The phosphate will be mobilized with the increased levels of ground water. To address this issue, Park management plans to use new crops as a means of phosphate extraction (Bos & de Vries, 2013). Special crops will absorb the phosphate in their biomass, while grazing and mowing will be used to remove the biomass from the fields. It is expected that the process will take 10-15 years to reduce the content of phosphate to normal.

Another conflict is related to the Oude Willem road that runs through the Park. The Staatsbosbeheer wants to remove the road to turn the whole area into nature. The municipalities feel that the road is important for local inhabitants as a necessity for emergency situations. However, even the local inhabitants themselves have different perspectives on the road issue. Though they see it as a necessity, the road is also unsafe for walking or biking, since people often drive very quickly. Consensus has been achieved that the road will remain temporarily and that outside traffic will be discouraged. To gather ideas about possible solutions, the *Beeldenboek oplossingsrichtingen* (Picture Book of Solutions) was commissioned (Grontmij, 2013). However, in the long-run, the road will likely no longer be needed and eventually be removed.

Another major conflict is the single remaining private farm. Project managers are confident that they will eventually decide to sell, but if not, a land sale can be enforced under the Rural Areas Development Act (WILG) of 2007. This would require a political decision, made on the regional provincial level, and could have wider political implications in the future. Thus, politicians in charge are reluctant to deploy this instrument and are still trying to negotiate.

One last conflict observed is related to the expected water table rise and the possible effects on the houses and properties of the local inhabitants. This was a major concern of the local community and to address it, additional hydrology research was carried out by water board Reest en Wieden. This led them to adapt their designs for waterway profiles and ensure that people are protected from flooding risks.

5.2.4 Strategies and instruments This dimension assessed the multi-instrumental character of the strategies of the actors involved. Different policy instruments have been applied for the restoration of the Oude Willem area (Table 6).

Even though there are many regulatory instruments involved, the whole process of project development was realized on a rather communicative, cooperative basis. Interviewed stakeholders described the decision making process as based on cooperation and good communication of the actors about common goals. This approach was applied

Table 6
Policy instruments applied for the restoration of the Oude Willem

Regulatory instruments	International: Natura 2000; WFD(2000), Flora and Fauna Act(2002); EU Nitrates Directive(1999); Dutch national regulatory instruments, such as Nature Policy Plan, National Ecological Network legislation, The Rural Areas Development Act (WILG) (2007)
Negotiated agreements	Applied in the process of farmland acquisition
Management & planning	Zoning, land use planning resulting in Ruimtelijke Ontwerp Oude Willem
Education & information	Visitor center, websites, newsletters

throughout the whole project development process. A good example is the negotiation process with farmers over the land acquisition. Despite the provinces, as the main stakeholders, having a direct regulatory instrument (WILG) which gives the power to enforce the sale upon farmers, all pieces of land were acquired through a negotiation/communication process. The only farmer left in the area is still being negotiated with. Therefore, the implementation of direct regulatory instruments is more of a mutual steering approach. However, some instruments such as Natura 2000 or the provincial spatial development plans pose clear requirements which need to be met and cannot be negotiated. Economic instruments in the form of subsidies or taxes were not found to be used.

5.2.5 Responsibilities and resources This governance dimension assessed a multiple-resource basis for implementation of the project. Table 5 introduced responsibilities and roles of the involved actors. Provinces have the authority to both negotiate and enforce the land acquisitions upon land owners. They also appoint land and nature managers. Water boards have the authority to manage the maintenance of private water bodies, and also to collect taxes for their services. Local communities are represented through their municipal councils, which have the legal authority to represent their communities' interests, and also have the right to present their case in court.

Responsibilities are clearly assigned, however financial resources are scarce in some instances. For example, maintenance of the touristic and recreational infrastructure is costly yet local business owners do not contribute. Assigned responsibilities have led to full cooperation between stakeholders.

5.3. Analyses of the results of GAT application to the Oude Willem case

Based on the observations made in the previous section according to the dimensions of the governance, the evaluation criteria are analyzed to assess the capacity of the governance context.

5.3.1. Extent: high, though business sector is excluded This quality criterion enquires to what extent all relevant aspects of the governance dimensions are taken into account. There is a highly multi-level character of the government involvement, though the national

government is becoming less involved through decentralization. Many relevant informal and formal actors are involved, though there is one important group of actors that has been left out - business owners. Park visitors were also not extensively included, but this did not influence project development or later implementation in a negative way. However, business owners are an important group of beneficiaries, since they are running their businesses directly on services provided by the Park.

The goals and various perspectives of the majority of the actors are integrated and taken into account. The Water Board Reest en Wieden and Staatsbosbeheer have different perspectives on the project, yet their goals remain coherent. For example, the perspective for the Water Board is hydrological but Staatsbosbeheer prioritizes nature and both are taken into consideration in the final plans.

There is a lack of economic instruments to encourage all involved actors to observe ecosystem services not as a common good but rather as something that needs to be produced and maintained in a sustainable way. However, development of these mechanisms is in the hands of higher level authorities. Actors involved in Oude Willem restoration can only indirectly influence creation of economic instruments through their provincial and national representatives. Responsibilities are clearly assigned, however, financial resources are scarce in some instances, such as for maintenance of the touristic and recreational infrastructure. This could be an obstacle in maintaining the constant output of ecosystem services.

5.3.2. Coherence: medium- need to prioritize benefits of ecosystem services *Coherence* highlights to what degree various factors of governance dimensions are strengthening rather than contradicting each other. In general, cooperation, common goals, communication and consensus were mentioned by stakeholders when describing the management structure. Close interactions and cooperation between stakeholders on relevant matters shows that *coherence* is positive. All levels were observed to work together. The dependence between both administrative and hydrological levels is fully recognized. However, interdependencies between the different ecosystem levels are not well recognized.

Integration of some goals in the project, in terms of Dutch cultural landscape and nature development goals, is in some ways a collision with the Nature Policy Plan adopted in the 1990s. Nature development is a mean to create an ecological network of large connected nature areas, while Dutch cultural landscape development includes aspects of human activities as well.

In terms of interactions, the Steering Committee is an important stable structure with 2-3 regular meetings a year. Another framework for interaction of relevant stakeholders is the Project Group, which is a less formal and more flexible setting. They have regular monthly meetings with all stakeholders. However, to deal with current issues they also meet outside of this schedule, involving actors relevant to the issue at hand. The funding model for project implementation is based on mutual consent of all involved actors. Since the majority of actors have common goals, it could be concluded that the funding model is based on synergy. However, the ecosystem services were not the focus of the project, and

consequently the future provision of benefits, such as recreation, is in question. Funding from the national budget is provided only for nature maintenance and not for other functions of the area, such as recreation or tourism.

Assigned responsibilities have enabled full cooperation between stakeholders, with one exception related to the attitude of the Province of Friesland. They believe that the land and nature manager should be chosen through tender procedure and that the current organization performing this task, Staatsbosbeheer, should not be the only possible choice. Therefore, the role of one of the main actors, Staatsbosbeheer, is not fully considered legitimate by one of the main stakeholders, the Province of Friesland.

5.3.3. Flexibility: medium- room to engage new actors The *flexibility* of a governance regime refers to what degree multiple adaptive strategies and goals are facilitated. The decentralization efforts seen in this case enabled the involvement of new actors. With the Provinces in charge of nature management, these tasks are assigned adequately. The Province of Drenthe considers Staatsbosbeheer as the one competent actor, which should be in charge of nature and land management. However, part of the area is in the Province of Friesland and, according to interviewees, this Province considers that nature can be managed by other actors as well and could therefore include new actors through a tender process. Also, some current roles are to be shifted from one actor to another: the role of DLG has been delegated to the Province of Drenthe.

Most of the issues that arise can be solved at the level of the Project Group. However, when problems of greater significance appear, which may have political consequences, involvement of the Steering Committee is required. There is certain flexibility in the interactions of the Steering Committee as well, since a chairman of the Committee can be consulted about issues outside the Project Group authority. Goals were re-assessed through the entire plan development and were adapted accordingly. Some goals are left to be re-assessed in the future, depending on the circumstances. This occurred on the conflicting issue of removing the Oude Willemweg. Working together to achieve a common goal is a culture that is strongly encouraged within the restoration project. For example, the interviewees stated that the amount of money given by each stakeholder does not determine the say or the power they have in decision making process.

5.3.4. Intensity: low – but with the potential to increase with needed resources *Intensity* looks at how strongly the elements of the governance context urge and support changes in current developments. It was observed that there is a strong commitment of all levels involved to carry out this project. There is no pressure from any of the managing actors towards management change. With respect to beneficiaries there is no pressure towards behavioral change either (though the current stakeholders recognize that this would be beneficial). The expected behavioural change of the beneficiaries would imply that they start contributing to the sustainable management of ecosystem services through a Payment for Ecosystem Services (PES) scheme. This would, however, require a change in general attitude and development of different incentive instruments on higher levels of authority.

At this point, there are no instruments to provide this kind of change. Resources allocated for the implementation phase of the project are sufficient. However, resources needed for later maintenance of the area are less secure. To address this problem, the Province of Drenthe applied for EU LIFE funding to buffer this uncertainty. The application was successful and both Provinces of Drenthe and Friesland collectively received the LIFE grant (2,935,381 euros) from the European Commission, for implementation of measures in the heart of Drents-Friese Wold National Park (Drents-Friese Wold National Park, 2014). It is seen as a proactive approach, increasing intensity, with a positive assurance of the future ability to successfully facilitate their responsibilities with the needed resources.

6. Discussion and conclusions

In this paper, the problem of governance complexity in protecting significant nature areas has been elaborated, emphasizing the link between the quality of governance and resilience. The paper reflected the reality of the governance for drought resilience contributing to the knowledge of what supportive and hindering governance conditions are. By illustrating the reality of governing the multiple water uses and the importance of the governance qualities in the process to enhance drought resilience, the research offers an insight into a broader water governance scholarship.

The paper assessed the governance circumstances surrounding measures to improve the drought resilience in the Drents-Friese Wold National Park. The restoration of the degraded agricultural land, the Oude Willem area, has been studied explicitly among the measures applied in the Drents-Friese Wold. We addressed the problem of governance complexity by examining the ecological resilience of the studied area. Adaptive measures that are implemented are to contribute to drought resilience of the area and to the potential of the Park to support ecosystem services for resilience. The restoration of stream valley hydrology can change the water table in the entire National Park. This will increase drought resilience and provide favorable conditions for the vegetation in the Park.

The governance regime has been observed as a context under which the measures are taken and emphasized the involvement of multilevel actors and their interactions in the implementation process. The GAT applied to the Oude Willem project showed which governance factors were supportive or hindering in the implementation of the adaptive measures in the studied area.

The results of the GAT application revealed that the quality of *extent* is high but there is a need to involve the business sector. The lack of interest from the business sector in project implementation is believed to be because they do not see how they will directly benefit from the ecosystem services delivered after the realization of the project. Currently, due to decentralization, this becomes even more important as funding becomes more uncertain. The involvement of businesses in the process would be a proactive way of capitalizing on the economic benefits to the area. Since the DLG has been deconstructed and the national level involvement has become less, including businesses much earlier is an opportunity to increase social and economic support. The reason why this quality is not

medium or low is due to the high involvement of multiple levels of authorities and actors in the project implementation and that different perspectives of various stakeholders are taken into account, and responsibilities are clearly assigned.

Coherence is observed as medium when prioritizing the benefits of ecosystem services. It is not high because the interdependences between different ecosystem levels are not well recognized, meaning that interrelations and functions of the ecosystems are not known. No studies or strategic assessments are being conducted at the moment regarding what ecosystem services could be made available. Actors are not concerned about prioritizing the provision of ecosystem services in terms of the resilience outputs. Since the ecosystem services are not in focus, the continued provision of benefits such as recreation is in question. All levels working together on common goals with funding provided for nature maintenance, provides a solid base of coherence.

Flexibility is medium though there is room to engage more actors. This is a result of decentralization, and the resulting openness to engage new actors. It does not score high on flexibility because the engagement of new actors makes the context even more complex and it does not score low due to the culture of working together to achieve goals in complex circumstances.

Of the four qualities, only *intensity* is considered low with the potential to increase given the presence of the needed resources. While the commitment of all levels in realization of the project is present, there are no instruments provided to influence provision of ecosystem services for drought resilience as a goal. Additionally, there is no pressure from managing authorities towards behavior change of the beneficiaries to contribute to ecosystem services management through schemes, such PES.

In summary, the overall picture from the analyses shows a governance context that is relatively supportive, displaying in general the positive qualities of a governance context. *Extent* and *coherence* revealed the majority of actors to be well-connected with a long history of cooperation and with a great deal of flexibility in their interactions. *Flexibility* was assessed as positive, though there are always issues to be tackled at specific levels. *Intensity* was revealed to be low despite the strong commitment of all levels to carry out the project.

Enhanced drought resilience is expected to occur following the re-naturalization of the Oude Willem, enabling nature development and the provision of additional ecosystem services. A higher water level will recover the capacity of the area for nature development and stimulate favorable conditions for recreation and tourism benefits in the area. In order to better support the implementation processes and future management of the area, the weaknesses observed in each quality need to be taken into account in cooperation with all the actors involved, making use of the high *extent* of actors involved.

The decentralization of Dutch nature policy could have major impacts on the implementation of the Oude Willem project. Decentralization prompted significant changes in the governance processes in terms of increasing co-operation between provinces and regional/local authorities in the field. However, decentralization could have also harmful effects regarding National Parks with Natura2000 sites. Fragmentation of international

nature policy tasks and responsibilities could have a negative effect on the overall resilience of Dutch nature. Another threat comes from the lack of financial resources at the provincial level. Decentralization does provide the opportunity to involve the economic sector in a proactive way by laying out more clearly the benefits that businesses can get from the Park. Further, the recent successful application for EU LIFE funding (“More water for wet habitats in Drenths-Friese Wold & Leggelderveld”) will enable significant improvements in the nature restoration and development issues in the Park. They have now secured the resources needed for later maintenance of the area.

The results show the influences that decentralized governance can have on protected areas. This study shows the complex impacts that such a process can have on integrated protected area governance systems. Further, this study shows that the multi-level and multi-scale approach for governing the resilience of protected areas can increase the resilience of the governance itself when it is sufficiently flexible and intense to adapt to changing political and natural circumstances.

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