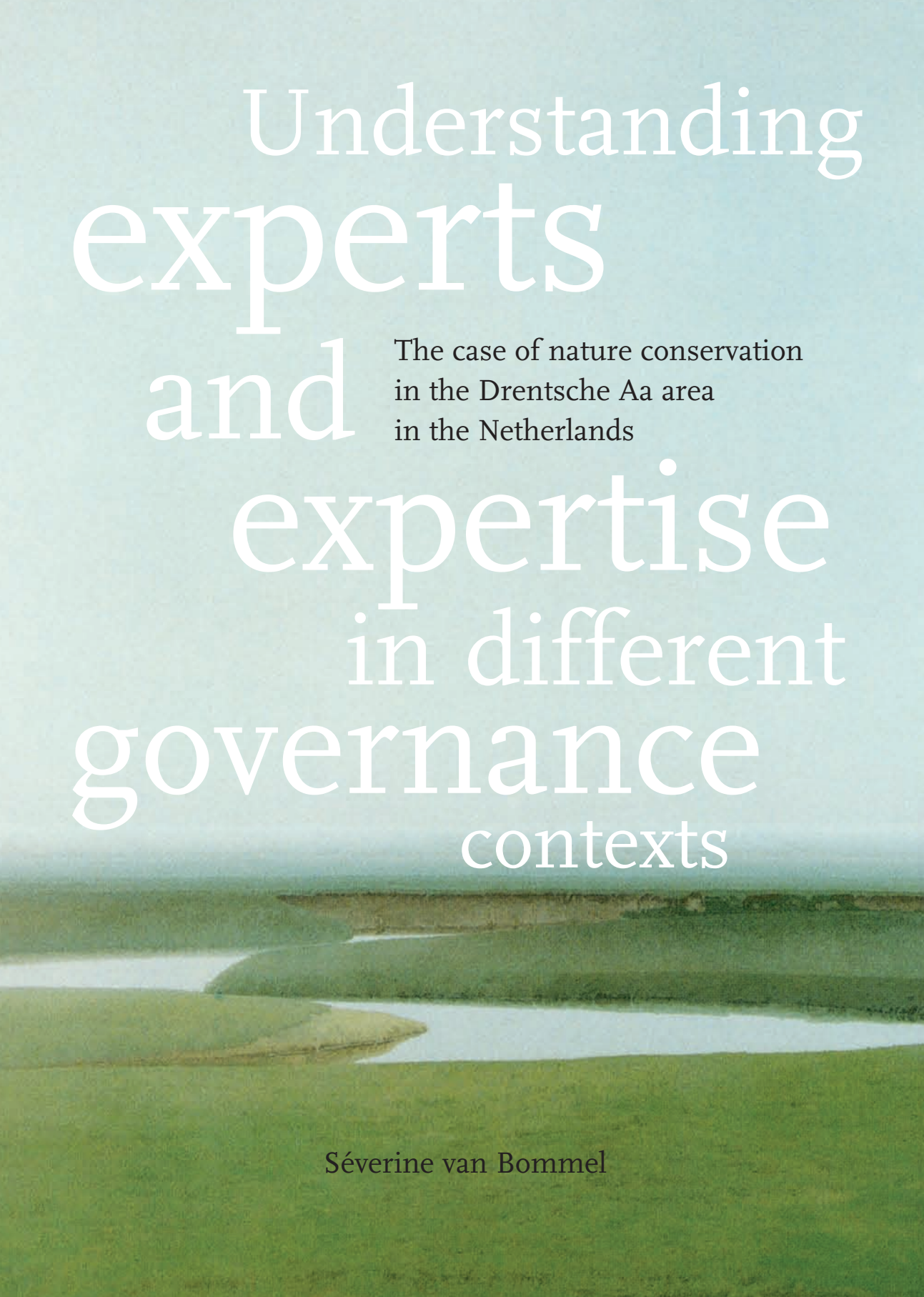
Understanding experts and expertise in different governance contexts

The case of nature conservation in the Drentsche Aa area in the Netherlands



Séverine van Bommel

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Dit onderzoek is uitgevoerd binnen de onderzoekschool CERES

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Séverine van Bommel

Proefschrift
ter verkrijging van de graad van doctor
op gezag van de rector magnificus
van Wageningen Universiteit,
Prof. Dr. M.J. Kropff,
in het openbaar te verdedigen
op vrijdag 14 November 2008
des namiddags om half twee in de Aula

Van Bommel, Séverine
Understanding experts and expertise in different governance contexts
The case of nature conservation in the Drentsche Aa area in the Netherlands
PhD-thesis, Wageningen University
ISBN: 978-90-5852-07-0
Photo cover: Painting 'Drentse Aa bij Westlaren (Zwienmaat)' by Berend Groen (used with permission)
Design: Luc Dinnissen (www.studiods.nl)

Professor, wilt u in het kort uw mening over dit boek geven?
Praw!
Fijn, dat het bij u zo overkomt. Wat denkt u van de vreemde verschijnselen, die er in beschreven worden, weet u wel?
Als wetenschappelijker denk ik eerst wanneer een duchtiger onderzoeking aangevangen geworden is geweest.
Heel fijn, professor. U bent dus, net als wij, gegrepen door de onverklaarbare toestanden die hierin overkomen, dacht ik.
Wat is uw mening daar dus over?
Leest u mijn boeklein 'Der Zijn-fenomeen der niet-existerende daadzaken in der licht des wetenschapbestands' bid ik u.
Ja, beslist, ja. Maar kunt u even kort samenvatten wat u dus van dit boek vindt?
Volstandiger wederzin.
Heel fijn, professor, héél fijn. Bedankt voor uw warme aanbeveling, weet u wel?
Der goede dag.

Uit een telefoongesprek met prof. dr. Prlwytzkofski te Rommeldam (Toonder, 1972)

Professor, could you please briefly tell us what you think of this book? Praw! Good, I'm happy that it gives you that impression. What do you think about the strange phenomena described in the book, you know? As a scientist I only start thinking once serious investigation has been initiated. Very good professor. So, like us, you are intrigued by the unexplainable situations that occur in the book. So what do you think about those? Pray, read my little booklet 'The Existence-phenomenon of the non-existing things, seen in the light of the state of the art'. Yes, sure, of course. But could you shortly summarise what your opinion of this book is? Sufficient reluctance. That's great professor, real great. 'You know? Thank you for this warm recommendation.' Nice day.

Excerpt from a telephone-conversation with Prof. Dr. Prlwytzkofski in Rommeldam (Toonder, 1972).

Preface and acknowledgements

As a child there was one thing that I was sure I did not want to become when growing up and that was a 'researcher'. I hated the experiments during physics and chemistry classes that I associated being a researcher with. That all changed when I entered university in 1996 and met Prof. Niels Röling. He introduced me to a completely different kind of research, not the world of experiments and 'hard' science but the world of interpretations and 'soft' science.

One thing led to the other and after finishing my MSc I decided to write a PhD dissertation. Both Prof. Niels Röling and Prof. Heiner Schanz were enthousiastic and decided to support me. As I did not have any external financing for my project, I decided to take on different jobs in order to pay for my PhD. Most jobs were provided to me by the Communication Studies Group (COM), the Forest and Nature Conservation Policy Group (FNP) and the Environmental Assessment Agency (MNP). When there were no jobs with Wageningen University, I made a living supervising kids during their lunch break at the Piekschool primary school in Wageningen and/ or as an assistant of the Dutch Electro Hypersensitivity Foundation.

To my supervisors I extend my sincere gratitude for sticking with me over the years in this uncertain situation. When Heiner Schanz left FNP, my supervision was taken over by Esther Turnhout. At about the same time, also Noelle Aarts joined the team. Niels Röling has always been a stable factor, providing me with a vision and inspiration for my work and an outlook in life. He always kept believing in me even at moments when I did not believe in myself anymore. A special thanks also goes to Janice Jiggins, who with Niels, was always there for inspiring scientific discussions and support. Noelle Aarts and Esther Turnhout kept asking for precision and clarity about what I was actually saying and writing. This helped me to develop my thoughts and focus my work. Because I regard this dissertation as a coproduction of knowledge of me and my supervisors, I refer to 'we' instead of 'I' in the following chapters.

My PhD enabled me to work with two exceptional chairgroup where I met some extraordinary people. I would like to thank Prof. Bas Arts, Prof. Cees Leeuwis and Prof. Cees van Woerkum for supporting me in many ways over the years. I am also indebted to Freerk Wiersum for formalising my supervision and my membership of the CERES research school. I am very grateful to Barbara Kolijn, Pia Holleman,

Willeke Huijer, Carla van Zwaaij, Joke Janssen, Maarit Junnikkala, Sjoukje Atema, Mirjam Cevat and Sylvia Holvast who assisted me in arranging various aspects regarding my PhD. During my time at FNP, it was very nice to share an office with Tesfaye Abebe, Charlotte Benneker, Ramona van Marwijk, Rikke Arnouts, Emanuel Marfo, Goretti Nabanoga, Michelle Cocks, Jim van Laar, Yurdi Yasmi, Retno Maryani and Marleen Buizer. All other colleagues are equally acknowledged for their friendship and the great discussions we had together, including Jessica de Koning, Marielle van der Zouwen, Birgit Elands, Arjen Buijs, Marjanke Hoogstra, Evelien Verbij, Innocent Babili, Josiah Katani, Purabi Bose, Jelle Behagel, Latifou Idrissou, Maartje van Lieshout, and Hetty van der Stoep.

I would like to thank FNP and COM for providing a 'backpack' which allowed me to draw up a Training and Supervision Plan and follow various interesting PhD courses. I am also grateful for the support of the Catherine van Tussenbroek Fonds and the Stichting LEB Fonds that allowed me to attend international seminars and present my preliminary results to an international audience and receive their feedback.

In February 2008 my career changed when I started to work for Alterra. I would like to thank Alterra for giving me the time to finalise my PhD thesis. At Alterra, I would especially like to thank Froukje Boonstra, Wiebren Kuindersma and Sara de Boer, my direct team members, for supporting me and listening to my endless PhD stories.

In relation to the finalisation of the dissertation, I would also like to thank Catherine O'Dea and Hilda van Tilborg for making my PhD thesis accessible in terms of English and Dutch language, and Luc Dinnissen for making it accessible in terms of layout. I would also like to thank Mrs Groen for giving me permission to use an illustration of the painting of Berend Groen as a cover of the book. Berend Groen was the son-in-law of Harry de Vroome (one of the founders of the Drentsche Aa nature reserve, see chapter 4). I am equally grateful to the NBEL for giving me permission to use their map as an illustration. I would also like to thank Edgar Stapelveld and Chris Blackmore for their photographs. I am also grateful to the Toonder Copyright Foundatioun for allowing me to use Marten Toonder quotes. Marten Toonder was a Dutch cartoonist whose Heer Bommel series ran in newspapers for nearly 45 years, and were re-run in some Dutch newspapers well into the 1990s. In his stories Sir Bommel is a bear of nobility who enjoys the finer things in life. Through Heer Bommel, Toonder expanded the Dutch language with words such as *'Minkukel'* meaning

a dimwit and *'Denkraam'* ('Thought-frame') which were used satirically in the strips but gained currency as real expressions, separate from their fictional context. His 'Bommel stories' acquired literary status in the Netherlands, with all stories being reprinted in a novel-like format.

The finalisation of my dissertation brings me to my defense. I am really happy that Charlotte and Ramona agreed to be my paranimphs and organise my defense. I am also very grateful that Ed van Bommel was willing assist me in the organising the ceremonies after the defence in the International Club.

Last but certainly not least, I would like to thank my all my friends for their support. In particular I would like to thank Rika for being able to call her night and day and, for all the newspaper clippings she collected on the Drentsche Aa over the years. Then it comes to my sister Linda: you are my sister and best friend at the same time no matter where you live. As for my mom and dad, sixteen years home schooling in the tropics really taught me how to take on challenges. This ability allowed me to write this PhD without any financing, even though most people advised against it. Their 'never give up' attitude and their never failing trust allowed me to start and to complete this project. Therefore I would like to dedicate this book to you, mom and dad: you were the best teachers I ever had.

Finally, I would like to thank Wouter for his patience and encouragement throughout the whole process. When we met, I was already working on my PhD thesis. He probably never really knew what he was getting into when he decided to marry me. The process of writing a PhD thesis was hard work for both of us. While I was sitting behind the computer during the weekends, he did all the shopping, the cleaning, the cooking , took care of our dog and took care of social responsibilities. Even during these hectic times, he made our home a happy and safe place where I could catch my breath. But most of the time, we just had great fun together. Wouter, thank you very much for letting me follow my dreams.

For Mom and Dad

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1

Surprise in the Drentsche Aa area

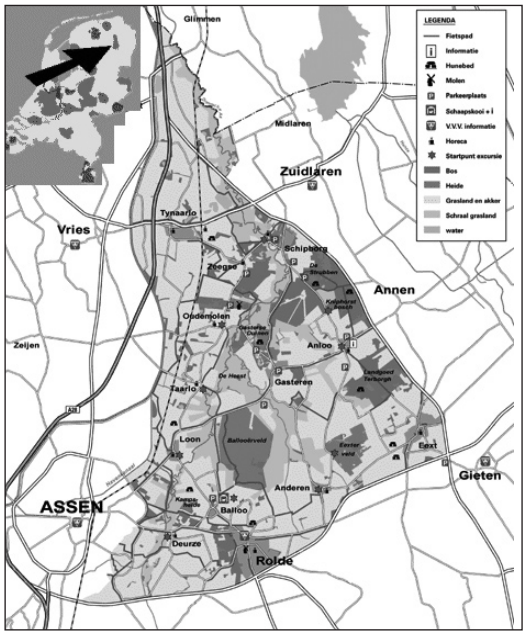
Mijn naam is Bommel. En lezen is heel nuttig. Het is goed om alles over natuurkrachten te weten en men kan zich heel goed ontspannen terwijl men zich inspant. Als je begrijpt wat ik bedoel.... (Heer Bommel) [1]

Toonder, 1970

This thesis begins with a story that tells the reader how and why it came to be written. This will provide some insight into the setting in which it was written, and, as we consider this story to be an integral part of the argument, we include it in the introduction.

The story of this PhD started on a cold autumn afternoon in September 2002, when a group of social science researchers went on a field trip to the Drentsche Aa area in the northern part of the Netherlands (see Map 1.1). It was raining cats and dogs and we were huddling together in the middle of an open field while an enthusiastic ecologist from Groningen University tried to convince us that this field - which appeared pretty ordinary to us - was in fact full of rare and vulnerable vegetation (see Map 1.1). As he explained to us, the Drentsche Aa area comprises a complex of brook valleys. Together, the brooks constitute one of the last relatively unspoilt river systems on the North German Plain. It is one of the few brook valley systems to have survived the massive land re-adjudication and development processes which

1 *My name is Bommel. And reading is very advantageous. It is good to know everything about the forces of nature and one can very well relax while one exerts oneself. If you know what I mean...*(Sir Bommel) - (Toonder, 1970)



Map 1.1: The Drentsche Aa.

virtually totally reconstructed the Dutch countryside. Full of passion, he explained that, in terms of landscape, natural beauty and biodiversity, the area is unique. Particularly unique are the water meadows which border the small streams that meander through the wide valleys gouged out during the last ice age. These meadows have always been very wet and were mainly used by farmers for haymaking in summer. As a result of the high water table and the continuous off-take of organic material over the centuries, a very rich and diverse herbal flora has developed. According to him, this diversity is largely determined by the seepage and subterranean circulation of water through layers of soil varying in mineral composition, but peat formation has also added to the richness of the tapestry of herbs. The water meadows are the primary object of nature conservation in the area.

Unfortunately, as he explained to us, September is the end of the season and therefore the field had recently been mowed. We had to get on our hands and knees if we wanted to see the remainders of orchids, hell weed and round-leaved sundew. As the water was soaking into our cloths, we obediently admired the tiny plants.

First of all, what were we doing out there in the middle of the Drentsche Aa nature reserve admiring tiny plants in puddles of water (see Picture 1.1 and Picture 1.2)? We were all working on a European Union-funded project on social learning for integrated management and

Picture 1.1: Field trip to the Drentsche Aa area: huddling together in an open field which appeared pretty normal to us. Picture taken by Chris Blackmore in September 2002.

Picture 1.2: SLIM field trip to the Drentsche Aa area: admiring tiny plants in puddles of water. Picture taken by Chris Blackmore in 2002.

sustainable use of water at a catchment scale (the SLIM project[2]). The project was designed to investigate the potential of the social learning approach for solving complex problems.
On the basis of the existing literature, we expected that social learning would contribute to integrated catchment management and other complex natural resource management issues.

In the past, governments tended to deploy hierarchical steering to deal with integrated catchment management and other complex natural resource management issues, and believed that these could be solved with standard techniques and procedures. The assumption was that the nature, boundaries and definition of both the problem and the changes sought were known. The soundness and relevance of the targeted change was usually entrusted to scientific experts who informed policy making. In other words, scientists or technical experts knew how nature ought to be and had access to a certain body of established knowledge that was sufficient to define policy solutions; and policy makers were supposed to make it happen. Integrated catchment management was often dominated by technical experts who defined objectives which assumed that the required changes were of a purely technical nature and that solutions could be defined and circumscribed. Policies were seen as instruments to ensure the application of this knowledge as a way to solve problems (SLIM, 2004; Ison et al., 2007).
In the SLIM project, we felt that, although this body of scientific knowledge is valuable, it would not be sufficient to provide all the answers needed for integrated catchment management in our current times. Our point of departure was that standard techniques and procedures that worked in the past are no longer capable of solving the problems in our current context. Complex problems often involve different stakeholders with different backgrounds, interests, values, convictions and perceptions with regard to the problem at stake and, as a consequence, they pursue different solutions. The opinions of the people interested in and affected by the complex problems can no longer be ignored. Therefore, approaches were required that recognised the multi-actor setting of the problem, the different perceptions about the

2 SLIM stands for Social Learning for the Integrated Management and Sustainable Use of Water at a Catchment Scale. It was a multi-country study funded by the EU-DG XII Fifth Framework 1998-2002, under Project # EVKI-CT-2000-00064 SLIM. Its main theme was the investigation of the socio-economic aspects of the sustainable use of water. Within this theme, its main focus of interest was the understanding of the application of social learning as a conceptual framework, as an operational principle, as a policy instrument and as a process of systemic change.

goals and/or the means and methods for reaching these goals (after SLIM, 2004; Ison et al., 2007).

Among these approaches were collaborative problem solving (Gray, 1989), joint problem solving (Dunning, 1986), social learning (Röling, 2002) or interactive policy making (Van Woerkum, 2000). In the SLIM project we specifically wanted to investigate the potential of social learning for solving complex problems. Social learning in this case meant placing a set of multiple, interdependent stakeholders in an intersubjective position in which they would collectively construct goals of, and solutions to, complex problems, through the co-production of knowledge (after Steyaert et al., 2007). Co-production of knowledge then refers to getting insight into the causes of, and/or the means and methods required to solve, the problem (Van Bommel and Röling, 2004). Social learning aimed, first of all, to enhance efficiency, as local knowledge in addition to scientific knowledge was thought to provide a better solution. Second of all, it aimed to enhance equity by means of empowerment and democratisation. Third of all, it aimed to give legitimisation to the policy process by providing a broad social basis of public support (Guijt, 2008).

We (the Dutch SLIM team) had selected three case study areas to study the potential of social learning for solving complex problems. The Drentsche Aa area represented one of these case studies. It had a rich, 40-year history of competing claims on the management and use of the area by farmers with interests in economic growth, and by nature conservationists with an interest in the conservation of a relatively unspoilt brook system. At the time of the SLIM research, a multi-actor platform to negotiate issues of resource use and management had just been installed. The participants hoped that it would lead to a greater ability to take concerted action with regard to the management and use of the Drentsche Aa area. We considered the platform to be a formal attempt at social learning. As SLIM researchers, we were therefore very interested in the platform and its functioning.

The field trip referred to earlier was a way to present our case to our SLIM colleagues during a project meeting to which all the teams from the other participating countries were invited in September 2002. We felt that a field trip would be the best way. Therefore, we took our colleagues on a two-day outing to the Drentsche Aa area. As we have already seen, unfortunately the weather was pretty bad and we ended up, completely soaked due to both groundwater seepage and rain, in a biodiversity-rich brook valley.

Fortunately, the outing entailed more than field trips into the area. We had also invited experts from the Drentsche Aa area itself to present their part of the Drentsche Aa story in a warm and comfortable hotel in the nearby village of Borger. These stories were meant to give our colleagues an overview of the situation with which we were dealing in the area. Back in the hotel, we changed into dry clothes and ordered a cup of tea or coffee. By that time, a nature conservation expert from the State Forest Service[3] - who was our first speaker that night - had arrived. He told us that the conservation of the rare vegetation that we had admired that afternoon was full of conflicts. 'Hydrological research has shown that the rainwater that infiltrates on the plateaus charges the seepage on which the rare vegetation in the water meadows depend', the nature conservationists told us. 'However, farming is a major industry nowadays, and large arable farms have been established on the moorland on the plateaus, made possible by the advent of fertilisers. The water that surfaces as seepage today pre-dates the heavy use of pesticides and fertilisers by the arable farmers on the plateaus from the sixties onwards. We fear that a time bomb is ticking away. Farming and nature conservation do not find it easy to coexist. We feel that modern agriculture is a major threat to the conservation of the area.' Then the nature conservationist went on to explain that, to sustain the ecological services of the water catchment, they had discovered that the hydrological system had to be managed integrally. This implied that attention had to be paid to the management not only of the plateaus where the water infiltrated but also of the plateaus where the groundwater percolated. This was not easy because plateaus were used for intensive agriculture. A capacity for governance thus had to be created at the level of the water catchment. However, the boundaries of the water catchment did not coincide with those of formal governance structures such as community, district or provincial administrations, nor with the jurisdiction of the State Forest Service. A new governance structure had to be created.

That was when we started paying attention to the nature conservationist's story. We as SLIM researchers were most interested in the negotiation processes in such a complex situation. The nature conservationist from the State Forest Service explained: 'As the owners of most of the Drentsche Aa nature reserve, we realised that we could not do everything ourselves. We have to develop a partnership with the stakeholders in the Drentsche Aa to conserve the area. That is the process that we are involved in right now'.

3 State Forest Service: Staatsbosbeheer: organisation founded in 1899 by the government to manage forest and nature areas.

By now, everybody had recovered from their soaking and was eager to know more. After a short break, an official from the Province of Drenthe added to the nature conservationist's story by informing us that in 1998 a platform had been instituted to develop plans for the creation of the 'National Landscape'. The National Landscape formula was chosen deliberately because an earlier attempt to create a National Park had to be abandoned as a result of the strong resistance by the local farmers and their union, the NLTO [4]. A National Landscape was expected to lead to less resistance because, in a National Park, all land use is dedicated to nature, whereas, in a National Landscape, multifunctional land use is accepted to a point. The general idea of the platform was to bring together stakeholders, or their representatives, and negotiate a more sustainable use of the landscape together. The platform represented all the major stakeholders in the area, including the NLTO, the State Forest Service, a drinking water company extracting water from deep wells, the tourist industry, the provincial administration of the Province of Drenthe, the City Council of Assen (the capital of Drenthe), the Water Board Hunze and Aas, and others.

While we were all enjoying a piece of apple pie, our third speaker, a regional broker, told us that 'learning our way out of complex problems is not as easy as it seems. The negotiations on the platform are only progressing with difficulty.' He shared his concern with us: 'We are trying to create a bottom-up process. But I say to myself, shit, if I cannot get this nature conservation expert guy to co-operate then I can talk whatever I want, but it will be a mission impossible. He has been the one-and-only-expert for years and, though he has realised that he needs other stakeholders, he still feels that his expertise is superior to that of others. So everybody gets very angry with him for knowing everything better. We are now caught in a status quo in which everybody is defending his or her own piece of the pie [i.e. bargaining without wanting to compromise], instead of baking a pie together as you would expect in a social learning situation. The process seems to have become stalled.'

The multi-actor platform did not seem to lead to a co-production of knowledge process at all. Instead, the negotiations only seemed to reinforce the impasse by driving the stakeholders further away from each other. Efforts to learn together and to design concerted action

4 NLTO: Noordelijke Land-, en Tuinbouw Organisatie: Farmers' Union: called Drents Landbouwgenootschap until 1982 and then merged with other provincial organisations in the north to form NLTO after 1982. NLTO represents the interests of farmers in Drenthe.

stagnated in fruitless negotiation. This was a disappointment to us. Here was a multi-actor platform that did not solve its problems through the co-production of knowledge. Instead, the negotiations on the platform that were intended to enhance the sustainable management of water resources became bogged down in fruitless negotiations. This created a puzzle or tension between what we had expected to find and what we actually encountered in the field; this triggered our curiosity. What was going on here? How could we understand this situation? Perhaps the relationship between governance and the role and nature of experts and expertise was more complicated than was assumed in the literature on social learning.

However, at that time the SLIM research was ending, and we had neither the time nor the money to get to the bottom of it. We needed to find another way. When the opportunity to carry out further research on the issue presented itself in the form of PhD research, we took it. So, inspired by the SLIM project, this PhD dissertation provides an in-depth exploration of the relationship between governance and the role and nature of experts and expertise. We investigated the shifts in governance in the Drentsche Aa area from past to present and especially the role and nature of experts and expertise. If we could get a better understanding of the relationship between governance and expert and expertise this would help us understand the situation in the Drentsche Aa as we had encountered it during the SLIM research.

Chapter 2 introduces a theoretical perspective that involves literature from policy science, science and technology studies, and communication studies. This literature was used to operationalise the shift in modes of governance, experts and expertise in such a way that they could be studied in greater detail. The theoretical perspective leads to a conceptual framework in which we explain how we will study the relation between governance, experts and expertise. This conceptual framework then leads to the main research question: how can the role and nature of experts and expertise in different governance contexts and their possible changes over time be understood?

Chapter 3 describes the interpretative methodology we used. We also discuss the iterative process of data analysis that we followed and describe the case study design of our investigation. Chapter 3 then goes on to explain how our data collection techniques of interviewing, observation and literature analysis fit in with our approach and design. Last but not least, it describes the narrative analysis that we used to interpret our empirical data and link them back to theory.

Chapters 4, 5 and 6 present the results of the case study. Chapter 4 goes back in time to describe the 1960s and 1970s when the conservation of the Drentsche Aa started. It describes the process by means of which the State Forest Service formulated a plan for conservation of the most vulnerable parts of the Drentsche Aa area, and how this plan came to be accepted as nature policy by the relevant ministry. It then goes on to describe the reaction of the farmers when they heard about the plan and the response of the State Forest Service. Last but not least, it describes the process by means of which the State Forest Service acquired the reserve and the way it dealt with the initial management problems. Chapter 5 describes the major events in the 1980s, namely, the conflict between two cognitive communities over the management of the Drentsche Aa area. It discusses how the State Forest Service's claims to expertise became contested in the 1970s when a second community of experts established itself. It then goes on to explain how these two communities protected their claims to expertise. It describes the negotiations between the communities over time and how a hegemonic situation was finally established. Chapter 6 discusses how the conflict between the nature conservationists and the farmers resurfaced in the 1990s when the Drentsche Aa area was nominated as a National Park. It describes the angry reaction of the farmers when they heard about the plan and the solution to this resistance: the installation of the multi-actor platform that had to make sense of a 'National Park with extended objectives'. It then goes on to discuss the way in which the platform functioned, by addressing the negotiations on the multi-actor platform.

Chapter 7 wraps up the findings. We first present a historical overview of experts and expertise in different governance contexts over time. After that, we draw conclusions by systematically answering our research questions. We then discuss our conclusions by relating them to other research and by discussing the scientific contribution and innovativeness of this PhD research.

Chapter 8 revisits our initial surprise and discusses how our conclusions can help us to understand the situation in the Drentsche Aa area. After that, we discuss the societal relevance of this research by discussing the practical implications of our findings.

We hope our reader will enjoy this book. As Marten Toonder's (1970) Sir Bommel stated, reading can be very advantageous: one can very well relax while one exerts oneself.

2

Theoretical framework: governance, experts and expertise

'Kennis is macht', sprak hij tot zichzelf. 'Dat zei mijn goede vader en de geleerde Bacon zei het hem na.' (Heer Bommel) [5]

Toonder, 1980

At the start of this PhD research in September 2002, the first few meetings were spent discussing the way in which we could approach our social learning problem conceptually. Over time, we developed a fuller understanding of what was theoretically relevant and what was not, and this finally resulted in the theoretical framework presented in this chapter.

In Chapter 1, we explained our main research aim: to understand the situation in the Drentsche Aa area. This situation had surprised us in the SLIM project. We had expected social learning to offer a solution to complex problems, but in the Drentsche Aa case it did not. Our expectation was based on the assumption that multiple actors with different backgrounds, including traditional experts, would all provide expertise for solving the complex problem. We had assumed that, because of interdependence, the different actors would have equal influence on the outcome of the process, and therefore the process could be characterised as a co-production-of-knowledge process. So we assumed

5 *'Knowledge is power' he said to himself. 'My dear father said so and the honourable scientist Bacon repeated this after him' (*Sir Bommel) - (Toonder, 1980).

there to be an unproblematic multi-actor setting and an unproblematic co-production-of-knowledge process. When our expectation was not met, we decided to investigate the relationship between governance and the role and nature of experts and expertise. We decided to take a historical approach to compare the relation between governance and the nature and role of experts and expertise at different points in time. In terms of concepts, this meant that our theoretical framework had to focus on governance and on experts and expertise.

We discuss these using literature from policy science, science and technology studies, and communication studies. We then present a conceptual framework in which we explain how we study the relationship between governance and experts and expertise. This conceptual framework then leads to the main research question. In section 2.1, we discuss the concept of governance. In section 2.2, we discuss experts and expertise. After that, in section 2.3, we discuss the relationship between governance and experts and expertise. It is important to note that this conceptual framework is not designed to present a complete model or representation of reality. Rather, it serves as a tool for understanding. The concepts presented are sensitising concepts intended to act as a guide by telling us where to look and what to look for, and that may give us some idea of what we can expect to find. They are interpretative devices whose specific interpretation depends on where the data take us. Their main purpose is to allow the research findings to be described in a shared language.

2.1 Governance

2.1.1 Governance as a mode of steering

Although theoretically the concept of governance is not new (Pierre and Peters, 2000), its popularity has undoubtedly grown in the last decade. In the 1970s, Scharpf (1978) argued that the government would lose its central and steering role. He predicted that governments would not be able to function without the cooperation of countless organisations and institutions. As a result, policy processes would have a network-like structure (Scharpf, 1978). Although it took a while for these ideas to have an impact on policy, policy makers are now willing to organise such policy processes. As a result, the number of multi-actor platforms has increased over the past decade (Mayntz, 1999; Kohler-Koch and Eising, 1999; Pierre and Peters, 2000; Rhodes, 2000; Irwin, 2006).

Over the last decades, governance has increasingly received attention

as a research object from many different scientific disciplines (Van Kersbergen and Van Waarden, 2001). Within these disciplines, governance entails a plethora of approaches such as policy networks (Rhodes, 1997), public-private partnerships (Wettenhall, 2003), corporate governance (Williamson, 1988), multi-actor governance (Van der Zouwen and Van Tatenhove, 2001; Bogaert, 2004), multi-level governance (Hooghe and Marks, 2001; Van der Zouwen, 2006), good governance (Rosenbaum and Shepherd, 2000), and societal governance (Kooiman, 2000). Even though the concept is understood in many different ways within these disciplines, the various understandings also have common characteristics. There is an emphasis on a shift in policy practices, from government (based on state institutions) to governance (based on a network of actors, among which non-state actors). All these approaches emphasise that there is a development towards an increasing involvement of non-governmental actors in policy making (markets and civil society). As a consequence of the multi-actor governance trend, decision-making processes resemble networks in which governmental and non-governmental actors are interdependent among each other. The multi-actor governance trend is often conceptualised as accompanied by multi-level trends towards decentralisation and internationalisation. Policy processes and interactions among actors are increasingly located outside the classical institutions of the nation state and inside informal settings, and more ad-hoc and temporary situations. Theorists disagree in their views on the consequences for the role of the state. Whereas some claim that it is still the state which holds the majority of decision-making powers, others perceive the state's role as decreasing (Van der Zouwen, 2006).

In the literature, three modes of governance are distinguished: hierarchies, markets and multi-actor settings.

Hierarchical governance is defined as a situation in which a single actor can unilaterally define problems and aims, make decisions and have them implemented. The means of policy (that is, the instruments of policy) and ultimate ends to be achieved (that is, the policy objectives) are determined by central government (Jordan et al., 2005). The autonomy of the central, expert-guided government is taken as the point of departure. A hierarchy is based on top-down regulation and decision making in which, on the one hand, rules and decisions are made by policy makers or by juridical order but in which, on the other hand, rules and decisions can also be the outcome of majority voting (Koppenjan et al., 1993; Teisman, 1995).
Market governance is defined as a mode of steering in which actors

take care of themselves, outside the purview of government. It takes the autonomy of local actors as its point of departure. The allocation of resources emerges out of the interactions of many actors with many different interests and preferences, and with separable control rights over specific resources. The capacity to govern a given state of affairs is dispersed among a large number of market actors controlling relevant resources. Pure market is only feasible and efficient when simple goods are exchanged (e.g., homogenous and perfectly divisible), whereas the exchange of complex goods will only work if additional institutional constraints prevail. In the latter case, market governance can only occur in a mix in which public hierarchies guarantee property rights and impose some restrictions on exclusively private control of resources (Koppenjan et al., 1993; Teisman, 1995)

Multi-actor governance is defined as a mode of steering in which the role of the state changes from top-down regulation to bottom-up facilitation of horizontal cooperation which involves non-state actors, such as NGOs, private parties and citizens (Kooiman, 1993; Pierre, 2000; Pierre and Peters, 2000). The means and ends of policy are determined by societal actors and governmental actors together. The multiple actors involved in policy processes manage different responsibilities and political engagements and pursue different, often conflicting, interests (Koppenjan et al., 1993; Van Kersbergen and Van Waarden, 2001). Multi-actor governance is based on the assumption that interdependence among stakeholders leads to incipient realisation among them that they must come to some agreement if anyone is to have satisfactory outcomes. New challenges emerge in terms of mobilisation of local actors, exploring spaces of negotiation and agenda setting for policy formulation and implementation (see Treib et al., 2005). The trends towards decentralisation and internationalisation, also referred to as multi-level governance (Van der Zouwen and Van Tatenhove 2001; Bogaert 2004), are less important for this research.

2.1.2 Shifts in governance

In this research we are interested in the modes of governance, or combinations of them, that can be recognised. The literature implies that there has been no uniform shift from traditional to new forms of governance. Research by Boonstra (2004) and Van der Zouwen (2006) suggests that multi-actor governance does not function in isolation. It always functions in a certain mix together with the more traditional governance mechanisms of (i) hierarchy, comprising regulatory and information-providing practices, including education and (ii) market, using incentives and relying on market mechanisms. Pierre and Pe-

ters (1998, p. 226) also argue that 'government organizations remain a part of the networks in these emerging models of governance, but they are conceptualized as dependent on the other actors to the same extent that those actors are dependent on government [organisations]. This easily leads to a blending of public-sector and private-sector resources..... An increasing number of hybrid organizational formats appear to have materialized as components of the governance framework.' Jordan et al. (2005, p. 484) also argue that 'by now, it should be apparent that government and governance (at least as the existing literature defines them) are actually much more intertwined than is implied by some governance theorists.' This implies that at the heart of the new multi-actor governance some very old assumptions of hierarchical governance may still reside.

So with regard to shifts in governance, this means that we expect to encounter hybrid forms, rather than fixed entities.

2.2 Experts and expertise

2.2.1 Science as a social practice

Our culture has historically distinguished experts and expertise from non-experts and local knowledge. The job of the expert was conceived of as 'speaking truth to power' (Price, 1965) or, as Jasanoff (2003, p. 160) phrases it: 'If experts commanded the high ground of the best available knowledge, then almost by definition there was little that non-experts could hope to add to the experts' deliberations.' Whereas laymen and local knowledge were labelled to be inadequate, illegitimate and nonsensical, scientific expertise was humankind's only 'truly cumulative and progressive' source of knowledge (Sarton, 1936 cited in Shapin, 2007, p. 434). Experts identified and propagated the scientific method to account for the power of expertise and to argue its superiority as compared to other ways of knowing. The universality, rationality and effectiveness of the method were said to determine whether one's claims to expertise either were or were not reliably founded and were said to determine whether one was or was not an expert (Shapin, 2001).

The last two decades of research within the sociology of science have convincingly demonstrated the negotiated nature of expertise and have shown how it has always been shaped by its institutional, cultural and historical context. Various studies have shown that the methods by which experts investigate nature are not given in any absolute sense,

but reflect the influence of governing research paradigms, available instrumentation, disciplinary standards of evidence and proof, experts' hopes of economic and professional rewards, and wider social attitudes toward nature and human dignity. Far from being neutral and apolitical, expertise may follow the preferences of those with the power to set research agendas and may incorporate the biases of gender, culture or nationality (see for example Latour and Woolgar, 1979). Even the experimental method, viewed by many as science's most powerful device for producing truth, only yields dependable results if it is backed up by pre-existing, negotiated standards of what counts as valid experimentation in a given scientific field (Collins, 1981; Jasanoff, 2003).

According to Shapin (1995), what expertise is does not come from any specific set of scientific beliefs or from any stable sense of the method scientists supposedly use to guarantee the power of their knowledge. Rather, who to count as experts and what to count as expertise is contingent on the context. As an example, he offers the case of a mother telling her son that 'An apple a day keeps the doctor away'. The awkward son replies by citing scientific studies that contradict the truth of the statement. Although he uses hard scientific facts to legitimise his argument, the son does not win. He just ends up looking silly or insolent. The power of the mother's statement is linked to the fact that she will, in this case, accept no counter-argument from nutritional research. In a society that acknowledges and respects the knowledge and insights of older and more experienced people, you do not challenge your mother about the truth of a proverb. Her embodied authority provides adequate grounds for such a statement and tells you what adequate evidence is. This example shows that, in this setting, the mother is the expert and the son is the non-expert, even though the son uses scientific knowledge to challenge his mother's experience. In a different setting, the outcome might have been different. In a formal exchange between expert nutritionists, the mother would probable look silly if she came up with this proverb to legitimate her arguments. This means that we cannot discuss experts or expertise without knowing the context or the occasion. One cannot properly talk about experts without talking about the capacity of certain kinds of people in certain circumstances to identify what is to count as expertise. In contrast to Bommel's citation, knowledge itself does not 'own' power. Rather, it is the reverse: if people in certain circumstances define what is to count as expertise, it is not knowledge that owns power but it is (people with) power that determines what is to be considered as knowledge (Flyvbjerg, 2002). Brian Wynne's (1989) famous study of the relationship between scientists and sheep farmers, after the radioactive fallout from the

Chernobyl disaster contaminated the Cumbrian fells, illustrates the meaning of this context dependedness of expertise. He analyses the relationship between the understandings and expertises held by the sheep farmers and those of the official bodies who were attempting to control the sale and movement of contaminated sheep. Wynne raises the question of the construction and application of scientific and local knowledge in this specific context. The main point of this case study is to elucidate the complex factors affecting the credibility of scientific knowledge and to highlight science as a culture involving its own pre-commitments and prescriptions beneath specific claims and facts. The sheep farmers were actively engaged in defining the meaning and boundaries of science in their particular social situation (Irwin and Wynne, 1996). A similar case was described in the book *No Safe Place*, in which residents of Woburn, Massachusetts, discovered a childhood leukaemia cluster and challenged experts on its cause. Residents from Woburn claimed that the leukaemia cluster was caused by two corporate giants, but this was denied by scientific experts. The residents gathered information and were able to trace the leukaemia cluster back to toxic waste that had contaminated the wells. The residents overcame the opposition from the polluting corporations and the federal and state agencies that were supposed to protect them, and managed to gain credibility for their claim (Brown and Mikkelsen, 1990). Both examples show that, at different points in time, local knowledge was appreciated in different ways. In both cases, local people were able, and also required, to convince scientists of their local knowledge by translating their arguments into scientific language which countered the claims made by scientists.

Yearly (2005, p. 110) summarises the insights from science studies in relation to experts and expertise as follows:

1. Science studies insist that it is people or communities that decide on reality. People decide, the world does not.
2. People are dependent on each other for determining what is known. The value of knowledge is decided in communities.
3. In those communities, relations of trust are central to the ways in which the value of knowledge is established and maintained.

This has implications for the way we conceptualise experts and expertise in this study. Instead of using a pre-defined notion of experts and expertise, this study starts from the assumption that what counts as expertise does not conform to transcendent criteria of logic or method, but incorporates popular conceptions (and misconceptions) of relevance and reliability, and all too commonly reflects differences in the

social and cultural positions of disputing parties and decision makers (see Lynch and Jasanoff, 1998). Our point of departure is that traditional contrasts between experts and non-experts simply do not work. All we can do is distinguish between different communities with different ways of engaging with knowledge and its status (Shapin, 1999).

2.2.2 Cognitive communities

To get a better insight into different communities and their ways of engaging with expertise, we turn to the work of Fleck (1979), who argues that experts are part of a *Denkgemeinschaft* or cognitive community. Such cognitive communities consist of both an esoteric circle of specialised, leading scientists who make the biggest research contributions and an exoteric circle of experts who follow the leading scientists and apply their findings (see Figure 2.1).

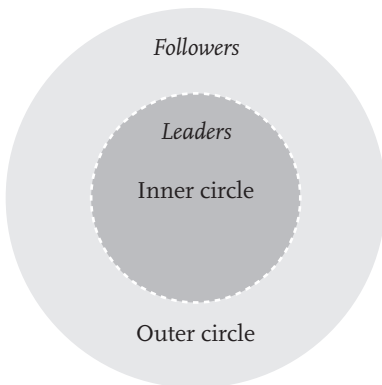


Figure 2.1: A visualisation of a cognitive community with leaders and followers.

Fleck argues that the perception of the nature of authoritative expertise changes as it moves from the esoteric domains of leading experts into more applied settings or exoteric domains. As expertise moves through these circles, increasing certainty is attached to knowledge claims and therefore knowledge claims are also defended with increasing certainty. As Fleck (1979, pp. 114-115) puts it: 'Popular exoteric knowledge stems from specialised esoteric knowledge. Owing to simplification, vividness and absolute certainty it appears secure, more rounded, and more firmly joined together', or as Kamminga (2000, p. 85) has explained the idea, 'facts become harder the further they are taken away from specialist circles.' At the cutting edge of research, facts are never absolutely fixed, but further away from specialist circles the self-evident nature of the 'fact' is largely uncontested (Botterill, 2006).

This implies that knowledge does not diffuse uniformly outward from its place of discovery. According to Porter (1995), it travels along networks from specialists to followers. Personal contact is crucial for its spread. While it travels, rich concepts are translated into explicit rules. These explicit rules lend authority to the followers in the exoteric domain, even if they have very little authority of their own. Leaders' knowledge comes from long experience which cannot be reduced to a handful of rules that can be looked up and mastered by anyone with a textbook. General principles are never sufficiently definite or concrete to apply to the richly detailed circumstances of experience and experiment. Instead, leaders use their tight network of personal contacts to invoke personal trust among other leading scientists and thereby negotiate the objectivity of their findings (Porter, 1995). For the followers, procedures become as important as outcomes, and rules may be maintained even though they are unable to accommodate new kinds of relevant scientific information. This is especially the case if their identity is locked in to their membership of the particular group in question. In that case, they can be expected to be particularly keen in defending the identity of their group. Struggles between cognitive communities can therefore become quite fierce. Members of one's own community are seen as the 'good guys' who have also found the undisputable objective truth, whereas members of the competing community are discredited (Turnhout et al., 2008). Depending on the threat, expertise is dogmatised to a greater or lesser extent and defending accordingly.

Fleck (1979) uses the concept of cognitive communities to distinguish between leaders and followers in scientific communities. In this research we are interested to see what kinds of cognitive communities can be identified and how they interact and change over time. We apply the concept of cognitive communities in a slightly different way than Fleck originally intended. As mentioned earlier, our point of departure is that traditional contrasts between experts and non-experts simply do not work. Therefore we feel it might be interesting to apply the concept of cognitive communities to all communities with a claim to expertise whether or not they follow scientific theories and have a core of scientists. Even outside the realm of science, we feel it might be interesting to distinguish between cognitive communities, leaders and followers.

2.2.3 Boundary work

For a dynamic view on expert identities and expertise, we turn to literature on identity construction and boundaries. According to

Lamont (2007), in particular social psychologists, sociologists and anthropologists have studied this process. Social psychologists working on group categorisation have for example been studying the segmentation between 'us' and 'them'. Brewer's (1991) social identity theory suggests that pressures to evaluate one's own group positively through in-group/out-group comparison lead social groups to attempt to differentiate themselves from each other. This process of differentiation aims 'to maintain and achieve superiority over an out-group on some dimension' (Tajfel and Turner, 1986, pp. 16-17). Other interesting studies are Jenkins' (1996) study of social identity and Haslam's (2001) study on groupthink and social identity construction. These studies describe collective identity as constituted by a dialectic interplay of processes of internal and external definition. On the one hand, individuals must be able to differentiate themselves from others by drawing on criteria of community and a sense of shared belonging within their subgroup. On the other hand, this internal identification process must be recognised by outsiders for an objectified collective identity to emerge.

The work of sociologists and anthropologists on collective identity complements that of social psychologists. Norbert Elias' *The Established and the Outsiders* (1976, with John L. Scotson), for example, analyses the causes for the difference in status between residents of two parts of a town ('the Village' and 'the Estate'). The latter group has more cohesion, in part because it is older and more established than the former. Its residents see themselves as having higher status because they have been able to gain control of strategic positions and channels of communication over time, and this allows them to stigmatise the outsiders and impose their own definition of self. Conversely, the outsiders are not in a position to impose an alternative self-definition. In his book *Honour and Violence*, Anton Blok (2001), an anthropologist famous for studying the Mafia in Sicily and rural banditry in the Netherlands, adds that segmentation between us and them is especially important for groups that are very much alike. Members of these groups seize upon minor differences in order to expand the identity gap between them. Blok (2001, p. 123) argues that 'social identity lies in difference, and difference is established, reinforced and defended against what lies closest because what lies closest presents the greatest threat'. The work of Elias and Blok shows that difference is a way to establish identity and community, and this is especially important if communities are very much alike. So if we want to understand expert identities and expertise from a dynamic perspective, we need to study the process by means of which boundaries are drawn and re-drawn

by actors in specific situations. Gieryn (1999) refers to this dynamic interactional process as boundary work. To get insight into the way in which cognitive communities draw boundaries to claim expert identities and expertise, we have to get insight into boundary work.

In 1983, Thomas Gieryn introduced the concept of boundary work to describe the discursive practices by which scientists 'distinguish their work and its products from non-scientific intellectual activities ... for purposes of constructing a social boundary that distinguishes some intellectual activities as 'non-science'.' (Gieryn, 1983, p. 782). Gieryn uses the concept of boundary work to describe how scientists build up barriers between themslves and the outside world to demarcate their practice and gain authority, credibility and legitimacy for it. The distinctions between true and false, good and bad, are made in, and maintained through, boundary work that is located in, and is reinforced by, a wider network of social institutions, beliefs and practices (Evans, 2005). Boundary work is defining a practice in contrast to other practices, to protect it from unwanted participants and interference, while trying to ascribe proper ways of behaviour for participants and non-participants (demarcation); simultaneously, boundary work defines proper ways of interaction between these practices and makes such an interaction possible and conceivable (co-ordination) (Halffman, 2003). Demarcation refers to how and where to draw the lines around science or expertise. Co-ordination tells us who belongs to a cognitive community, who does not, and how they relate (Metze, 2006, 2007).

But how do they do it? Experts express their differences in a variety of ways in which they rely on their own rhetorical sensibilities to make a case for their point of view. According to Gieryn (1983), boundary work can first of all take the form of us and them stories, also called stereotyping by other scholars (Argyris, 1994; Pearce and Littlejohn, 1997). Being an expert is associated with highly stereotyped views of non-experts and pressures towards consensus in these and all other judgments among the actors claiming a shared expert identity (Gieryn, 1983).

In addition to stereotyping, Gieryn introduces cultural repertoires as the second boundary work strategy. These cultural repertoires 'can be used for ideological self-description' (Gieryn, 1983, p. 783). For example, the merits of science are described as empirical, theoretical, factual, a method, objective. When confronted with religion, scientists claim to be empirical, but when confronted with mechanics, science

is 'better' due to its theoretical nature. There are several images or cultural repertoires scientists can drawn on: 'among them are Merton's norms, but also claims on the utility of science for advancing technology, winning wars, or deciding policy in an impartial way' (Gieryn, 1983, p. 783). So by drawing on cultural repertoires, demarcation criteria are tailored to the audience and the context. When experts are convinced that their own framing of expertise is superior to others, the appropriate way of resolving boundary conflicts seems to be a rigorous demonstration that their own position properly meets the cultural standards of good knowledge and appropriate action (after Pearce and Littlejohn, 1997). Through stereotyping others and by drawing on cultural repertoires, actors claim a certain (expert) identity and define their relationships with others.

Besides the two boundary work strategies described by Gieryn, stereotyping and ideological self-description, Turnhout et al. (2008) distinguish a third boundary work strategy called division of labour. This boundary work strategy is not aimed at keeping others out, but at establishing good working relations with others (Turnhout et al., 2008). When scientists or experts try to come to a working cooperation, they actually do two things: they make a more or less sharp distinction between who fulfils which role, and they coordinate their mutual tasks. This requires a negotiation of the identity of actors as well as how they are to work together (Halffman, 2003). A division of labour allows scientists or experts from different cognitive communities to cooperate with each other.

The concept of boundary work was initially formulated to explain how *scientists* maintain the boundaries of their community against threats to its cognitive authority (e.g., fraud and pseudo-science). Boundary work has also been found useful for studying science-policy interactions (Jasanoff, 1990; Turnhout et al., 2007, 2008; Halfmann, 2003; Metze, 2006, 2007). In our research we use the concept of boundary work to study how expert identities and expertise are claimed by cognitive communities.

2.2.4 Shifts in the nature and role of experts and expertise

So far we have argued that expertise is a social practice in which cognitive communities and boundary work play an important role. We have stated that expertise is contingent on the context. In this research we are interested in shifts in the production of knowledge (see Chapter 1). To get insight into the way in which the nature and role of experts and expertise can be expected to change over time, we turn to the work

of a number of scholars who have described different paradigm shifts in 'doing' science.

As far back as 1972, Alvin Weinberg in his now famous distinction between science (or what he also called research science) and trans-science (also called policy science) argued that not all problems with a scientific appearance can be solved by means of research science. In his work, the domain of science covers phenomena that are deterministic, whereas trans-science covers the domain of phenomena that are uncertain. Jasanoff (1990) uses the concept of regulatory science in her study on scientific advisers in United States policy and concludes her analysis with a plea for the construction and a belief in the possibility of 'serviceable truths', which satisfy tests of scientific acceptability and support reasoned decision making. Funtowicz and Ravetz (1992), referring to Kuhn's (1970) work on paradigm shifts in science, spoke of the emergence of the need for a post-normal science to deal with fundamental uncertainty with respect to highly salient issues for which puzzle-solving science no longer provides satisfactory answers. 'For these new problems, quality depends on open dialogue between all those affected. This we call an 'extended peer community', consisting not merely of persons with some form or other of institutional accreditation ('stakeholders'), but rather of all those with a desire to participate in the resolution of the issue' (Ravetz, 1999, p. 651). Also in 1992, the translation appeared of Beck's (1986) work on the risk society and the need for a de-monopolisation and democratisation of expertise. He argues that by placing doubt and ambiguity at the core of the scientific process, it becomes possible to open the door to a more democratic restructuring of science: 'Precisely because the investigation of effects and risks presumes their production, others - laypeople, the public sphere, the parliament, and politicians - must also have a say; they must regain the power to make decisions in a society that has gone over to shaping its future through technology .... Democracy beyond expertocracy ... begins where debate and decision making are opened [up]' (Beck, 1995, p. 109). Gibbons, with his discussion of mode1/mode 2 science, also argues that a new social contract between science and society is needed because not only does science meet the public, but society can now also 'speak back' to science. 'Traditional boundaries between university and industrial science, and between basic and applied research, are disappearing. As a result, science and society are invading each other's domain, requiring a rethinking of previous responsibilities .... Under the prevailing contract, science was left to make discoveries and then make them available to society. A new contract will be based upon the joint production of knowledge by society and science' (Gibbons, 1999, p. 11).

We realise that there are substantial differences among these approaches. For example, whereas the distinction between science and trans-science was one of degree rather than kind for Weinberg (1972), the distinction between normal puzzle-solving science and post-normal science is different in kind for Funtowicz and Ravetz (1992). Gibbons' mode 2 science is also mission-oriented problem solving, which approximates Funtowicz and Ravetz' professional consultancy and differs profoundly from post-normal science in that it does not mention an extended peer community (Ravetz, 2006). Despite these differences, the approaches have in common that they argue that there is a (paradigm) shift in doing science. They all argue that an increase in the complexity and uncertainty of scientific questions should likewise result in an increase in the democratisation of procedural rules as to how to do science. Thus, when complexity and uncertainty are low, science can proceed in a more orthodox manner. In the face of uncertain, complex questions (e.g., environmental risks), however, scientific ways of knowing break down as values and uncertainty require scientists to look beyond the facts to include other thoughts, observations and data - and therefore include laypeople, the public sphere, the parliament and politicians - in the production and use of knowledge.

In this research, we are interested in the general shift in knowledge production, which we refer to as a shift from speaking truth to power to co-production of knowledge. Speaking truth to power (a term borrowed from Wildavsky, 1979) refers to a situation in which science by a single actor is thought to lead to gradual progress towards objective knowledge of truth. Independent and curiosity-driven science creates new insights, concepts, hypotheses and technical instruments. Conflicting knowledge claims between disciplines are pacified by respecting disciplinary boundaries. On the other hand, lay knowledge is unanimously labelled as inferior (Hoppe, 2005). This means that only scientists are framed as experts and therefore cognitive communities consist only of scientific actors. These cognitive communities have clear disciplinary boundaries which are respected. As there is little interaction among the various cognitive communities, there are no boundary work strategies such as stereotyping or division of labour. Boundary work strategies take the form of ideological self-description. Demarcation criteria include traditional criteria such as the self-described expertise being objective, theoretical, factual. Co-production of knowledge refers to a situation is which multiple actors become involved in the process of knowledge production and use. The notion was first introduced by Shapin and Schaffer

(1985) who drew connections between the history of science and political thought and showed how in the 17th century science and policy were co-produced. Jasanoff (2004) also uses the concept of co-production of knowledge to argue for a co-evolution of science and policy. She argues that ways of knowing the world are inseparably linked to the ways in which people seek to organise and control it. If we apply this notion to the nature and role of experts and expertise, co-production of knowledge implies a new role for scientific experts and expertise. It recognises that science alone cannot provide the uncontested means and methods for solving problems. It also puts the value of scientific and technical expertise into a different perspective as other types of expertise (e.g., lay expertise and local expertise) enter the political process. In fact, all participating actors are experts in their own right. This means that cognitive communities can consist of scientific actors, but they can also include other types of expertise and ways of knowing. In a situation of co-production of knowledge, there is substantial interaction among the various cognitive communities. Boundary work strategies take the form of division of labour: each cognitive community respects the boundaries of the others and recognises the others as legitimate actors with which to cooperate. Each cognitive community contributes to knowledge production by providing its own expertise. As boundaries are respected, there is no stereotyping. Demarcation criteria include practical issues relating to the division of labour between different cognitive communities and to the clarification of different tasks and responsibilities, such as experience, norms and values, in addition to traditional scientific issues such as expertise being objective, theoretical and factual.

2.3 Relation between governance and expertise

In our earlier theoretical discussion on experts and expertise, we stated that our point of departure was that the nature and role of experts and expertise is contingent on the context. This means that the nature and role of experts and expertise can be expected to differ in different governance contexts. Goals, norms and values of actors vary over time, and therefore a governance context, and its associated role and nature of experts and expertise, that works at one point in time may be completely inappropriate at another. The nature and role of experts and expertise in new governance contexts can be expected to be different from their nature and role in the old governance context.

In the literature, the shift in governance is argued to relate to the shift in the nature and role of experts and expertise. Beck (1992), Funtowicz and Ravetz (1992) and Gibbons (1999) argue that, although in the industrial

society of the past speaking truth to power might have worked well, now that we are confronted with the side effects of modernisation - in the form of complex, value-laden and uncertain environmental and sustainability problems - we need a new knowledge production process. These authors argue that shifts in the nature and role of experts and expertise are linked to shifts in society in general, but from their work it remains unclear how the shifts in the nature and role of experts and expertise exactly relates to the shifts in governance in particular. This relationship has been construed more clearly by Turnhout (2003) and Turnhout et al. (2007, 2008). These authors describe the relationship between the policy process, the role of the scientist and the use of knowledge. They link different types of policy problems to different types of policy processes (building on the work of Hisschemöller and Hoppe, 1996, 2001), the role of scientists (building on the work of Hisschemöller et al., 2001) and the use of knowledge (building on the work of Rich, 1997 and Weiss, 1991).[6] They distinguish four different types of policy processes, four different roles of science and four types different types of knowledge use:

1. In a rule-based policy process, scientists take on the role of problem solvers, and scientific knowledge takes the form of data.
2. In a policy process characterised as a learning process, which includes scientists and stakeholders with different perspectives on the problem, scientists take on the role of problem signaller, and scientific knowledge takes the form of ideas.
3. In a policy process characterised as compromise, scientists accommodate the policy process by providing policy makers with shared concepts that facilitate political compromise.
4. In a policy process characterised as negotiation, scientists provide scientific expertise as arguments in a power struggle. The role of scientists is like that of a lawyer, advocacy is their role.

If we interpret a rule-based policy process as a hierarchical governance context and a policy-as-learning process as a multi-actor governance context, we can get insight into the way in which shifts in governance are thought to be related to shifts in the nature and role of experts and expertise. In this line of thinking, a hierarchical governance context would relate to what we characterise as speaking truth to power. In this situation, knowledge production and knowledge use are conceptualised as separate processes in which traditional experts produce knowledge and policy makers use it. Policy making involves a community of traditional (often scientific) experts that takes on the role of

6 Hoppe (2005) elaborates further on this relationship and distinguishes eight different types of science-policy relationships.

problem solver. Boundary work takes the form of ideological self-description in which the cognitive communities use criteria such as their self-described expertise of being objective, theoretical, factual.

A multi-actor governance context would then relate to what we characterise as co-production of knowledge. Instead of separate processes of production and use, this situation is conceptualised as a dynamic science-policy interface in which actors from different cognitive communities, including the traditional experts, are involved in interactive co-production processes. Policy making involves deliberation and participation, and different forms of expertise are used to facilitate policy learning. Boundary work strategies take the form of a division of labour: each cognitive community contributes to knowledge production by providing its own expertise. As disciplinary boundaries are respected, there is no stereotyping. Demarcation criteria include practical issues relating to the division of labour between different cognitive communities and to the clarification of different tasks and responsibilities such as experience, norms and values, in addition to traditional scientific issues such as expertise being objective, theoretical, factual.

In this research, we wonder to what extent this one-to-one relationship between governance and the nature and role of experts and expertise holds in practice. Chapter 1 has already shown that the relationship between multi-actor governance and the co-production of knowledge is not clear-cut and unambiguous. Our theoretical discussion on governance also shows that in practice the extent of the blurring between governance contexts may be quite substantial. If hierarchical governance and multi-actor governance are not fixed entities, and the actual manifestations of governance cannot be taken for granted, then this can also be expected to have consequences for the nature and role of experts and expertise.

In contrast to Turnhout (2003) and Turnhout et al. (2007, 2008), this research does not assume a relation between the nature of the policy process or the governance context and the role of experts and expertise, but investigates it empirically. The policy typology does make clear, however, that our ideas about the different roles of experts and expertise may be expanded beyond the two categories, speaking truth to power and co-production of knowledge, that we have described so far.

Turnhout et al. (2007, 2008) distinguish two additional roles of experts and expertise: 'expertise as ammunition' and 'expertise as accommodation'. These may help us to get a more nuanced understanding

of the relationship between governance and the nature and role of experts and expertise.

Expertise as accommodation refers to those situations in which scientific experts accommodate the policy process by providing shared concepts that enable political compromise. Although the content of the expertise differs from problem solving and involves shared concepts rather than concrete solutions, it is very similar to speaking truth to power in terms of cognitive communities and boundary work strategies. Just like speaking truth to power, expertise as accommodation also involves only one dominant cognitive community that incorporates the interests of others in its views (in this case by means of vague or fussy concepts) (see Turnhout et al., 2008 for an example in Wadden Sea policy). In terms of boundary work strategies, it engages mainly in ideological self-description. This means that, for the purpose of this research, we do not use expertise as accommodation as a separate role of experts and expertise. Rather, we see it as a sub-type of speaking truth to power.

The notion of expertise as ammunition, however, is very relevant for our research. Earlier, we touched upon the long history of literature on scientific controversies in science and technology studies (but for additional examples see Collingridge and Reeve, 1986; Nelkin, 1982; Weiss, 1991). Scientific controversies are characterised by multiple cognitive communities that all have conflicting views on what counts as relevant and authoritative expertise. This results in a (non-violent) power struggle among multiple cognitive communities. The members of the competing communities are involved in boundary work in the sense of stereotyping and ideological self-description. They argue that their own expertise is scientific, objective and true, while at the same time they deconstruct the expertise of the competing community and portray is as subjective, unscientific, biased, etc. Far from entering a co-production-of-knowledge process, a discursive struggle can be expected to take place among multiple cognitive communities over what counts as legitimate expertise and how legitimate expertise should be constructed. Clearly, in terms of boundary work strategies and the relation between different cognitive communities, expertise as ammunition is an important addition to the earlier described roles of experts and expertise, speaking truth to power and co-production of knowledge.

2.4 Research questions

All in all, our theoretical framework drew our attention to two theoretical trends. The first trend relates to the governance context and describes a shift from hierarchical governance to multi-actor governance. The second trend relates to the nature and role of experts and expertise and describes a shift from speaking truth to power to co-production of knowledge. In theory, the shift in governance is linked to the shift in the nature and role of experts and expertise, and vice versa. In this research, we want to get insight into the way in which the shifts manifest themselves in practice and how they relate to each other. To do so, we first study the shifts in governance by investigating the number and type of actors involved in the policy process at different moments in time. On the basis of the literature, we can distinguish two governance contexts: 1) hierarchical governance and 2) multi-actor governance. Second, we study the nature and role of experts and expertise by investigating the number and type of cognitive communities, their boundary work strategies and their demarcation criteria at different points in time. On the basis of the literature, we can distinguish three natures and roles of experts and expertise: 1) speaking truth to power, 2) co-production of knowledge and 3) expertise as ammunition. Once we establish how the shifts manifest themselves in practice in terms of the governance contexts that emerge and in terms of the nature and role of experts and expertise, we then investigate how they relate to each other. This leads to the following research question:

Main research question
How can the nature and role of experts and expertise in different governance contexts and their possible changes over time be understood?

Sub-question 1
How did the governance context change over time?

Sub-question 2
How did the nature and role of experts and expertise change over time?

The main research question is answered on the basis of our empirical results. We would like to stress that the structure of the empirical results chapters is based on a chronological time order and not on the concepts. Before we get to the empirical results chapters, the next chapter shows how we carried out the study in order to answer the

research questions. We invite the reader now to join us in a discussion of the research methodology.

3

Methodology

Wat heeft men eraan om alles het beste te weten, wanneer iedereen het beter weet, als je begrijpt wat ik bedoel? (Heer Bommel)[7]

Toonder, 1955

3.1 Approach

3.1.1 Interpretative approach

To investigate how over time the nature and role of experts and expertise was constructed and negotiated in different governance contexts in the Drentsche Aa area in the Netherlands, we used an interpretative approach. This short story by A. Averchenko, recounted by Joel Charon (1989), will introduce what we mean by such an interpretative approach.

> *'Men are comic', she said, smiling dreamily. Not knowing whether this indicated praise or blame, I answered noncommittally: 'Quite true.'*
> *'Really, my husband's a regular Othello. Sometimes I'm sorry I married him.' I looked helplessly at her. 'Until you explain-' I began.*
> *'Oh, I forgot that you haven't heard. About three weeks ago, I was walking home with my husband through the square. I had a large black hat on, which suits me awfully well, and my cheeks were quite pink from walking. As we passed under a street light, a pale, dark-haired fellow standing near by glanced at me and suddenly took my husband by his sleeve.'*
> *'Would you oblige me with a light', he says. Alexander pulled his arm*

7 *What's the use of knowing everything best, if everyone knows things better, if you know what I mean?* (Sir Bommel) - (Toonder, 1955)

away, stooped down, and quicker than lightning, banged him on the head with a brick. He fell like a log. Awful!'
'Why, what on earth made your husband get jealous all of a sudden?'
She shrugged her shoulders. 'I told you men are very comic.'
Bidding her farewell, I went out, and at the corner came across her husband.
'Hello, old chap,' I said. 'They tell me you've been breaking people's heads.'
He burst out laughing. 'So, you've been talking to my wife. It was jolly lucky that brick came so pat into my hand. Otherwise, just think: I had about fifteen hundred roubles in my pocket, and my wife was wearing her diamond earrings.'
'Do you think he wanted to rob you?'
'A man accosts you in a deserted spot, asks for a light and gets hold of your arm. What more do you want?' Perplexed, I left him and walked on.
'There' s no catching you today'. I heard a voice from behind. I looked around and saw a friend I hadn't set eyes upon for three weeks.
'Lord!' I exclaimed. 'What on earth has happened to you?'
He smiled faintly and asked in turn: 'Do you know whether any lunatics have been at large lately? I was attacked by one three weeks ago. I left the hospital only today.'
With sudden interest, I asked: 'Three weeks ago? Were you sitting in the square?'
'Yes, I was. The most absurd thing. I was sitting in the square, dying for a smoke. No matches! After ten minutes or so, a gentleman passes with some old hag. He was smoking. I go up to him, touch him on the sleeve and ask in my most polite manner: 'Can you oblige me with a light?' And what do you think? The madman stoops down, picks up something, and the next moment I am lying on the ground with a broken head, unconscious. You probably read about it in the newspapers.'
I looked at him and asked earnestly: 'Do you really believe you met up with a lunatic?'
'I am sure of it.'
Anyhow, afterwards, I was eagerly digging in old back numbers of the local paper. At last I found what I was looking for: A short note in the accident column.

UNDER THE INFLUENCE OF DRINK

Yesterday morning, the keepers of the square found on a bench a young man whose papers show him to be of good family. He had evidently fallen to the ground while in a state of extreme intoxication, and had broken his head on a nearby brick. The distress of the prodigal's parents is indescribable.

The perspective of the participant observer in the Averchenko story is similar to that of us as interpretative researchers. In Averchenko's story, each participant sees what happened from his or her own perspective. The lady understands the event in terms of her husband's jealousy, the husband in terms of robbery, the victim in terms of lunacy, and the newspaper in terms of drunkenness. By defining the situation as a robbery, the husband picked up a brick and cracked the skull of the man that had asked him for a light. He acted in the situation on the basis of how he had defined it. Each person explains the story to his or her own understanding, and this understanding is very real in its consequences. In Averchenko's story, all the participants have a different perspective of what happened. Each thinks that he/she knows what *really* happened. Only the participant observer is concerned with understanding the perspectives of the different participants. Without the observer we would not have known that any one perspective was just that - a perspective. Each of the separate accounts is given as a description and explanation, not as a perspective. It is only because of the observer that we are able to see that they are perspectives and understand the consequences of the way in which these perspectives were constructed (Bonner, 1994). According to Yanow (2000), the focus on interpretation of meanings made by actors lies at the heart of an interpretative approach. Just like the participant observer in Averchenko's story, the interpretative researcher tries to understand the way in which different people, or groups of people, give meaning to specific events. Just as Marten Toonder's Sir Bommel said, what's the use of knowing everything best, if everyone knows things better?

An interpretative perspective assumes that we live in a world that can be understood in multiple ways. In this world there is no absolute truth. In this research, we used an interpretative approach because it provided us with a research perspective that was well suited to comparing social processes and concepts. By looking at the way in which historical events were framed in terms of both governance and experts and expertise, we were able to capture the changes in the nature and role of experts and expertise. But not only did we try to find out the meanings that people gave to the governance context and to experts and expertise in these settings, we were also interested in how these meanings were constructed in interaction. In other words, we focused on the meanings of policy-related events for different actors in terms of governance, experts and expertise, and on the processes of boundary work by which those meanings were constructed in interaction with other actors. As the situation under study is always embedded in a wider social context, the nature and role of experts and expertise was

grounded in the experiences of people living in a specific historical governance context. So, our interpretative approach is rooted in an understanding of the everyday lived experiences of people in specific (historical) settings to acquire an understanding of how they created meanings in everyday life.

Going back to the Averchenko story, we feel that our role as interpretative researcher goes a bit further than the role of the participant observer in the story. The perspective of the participant observer is empirical, but empirical in a particular sort of way. The observer in Averchenko's story resisted giving his own interpretation of the situation so that the perceptions of the participants could be presented. The observer could, for example, have reflected upon a marriage in which the partners live in totally different worlds. Instead, the Averchenko observer refrained from interpreting his findings so as to develop an informed understanding of the event. He excluded himself from the relation between the event and its meaning. He became a mouthpiece for the participants' perceptions (Bonner, 1994). We feel that the interpretative researcher is more than that. The interpretative researcher is a kind of translator, bringing other interpretative communities' stories to the readers. We acknowledge that it is important to understand how actors perceive their situation, but we also think that it is important to arrive at a conceptual understanding of that situation. In this research, we want to go beyond pure data and develop an understanding that is interpretative but also theoretical in character. We take the various actors' interpretations as data and use them to give meaning to our sensitising concepts.

3.1.2 The roots of the interpretative approach

According to Yanow (2006), the interpretative approach has become an umbrella term for several schools of thought, including those drawing on phenomenology, hermeneutics, symbolic interactionism and ethnomethodology.

All these schools of thought take as their point of departure the idea that perceptions are filtered and organised in a process of sense making or framing. They differ in their approach to this framing process. Phenomenology can, for example, be described as the exploration and description of phenomena, where phenomena refer to things or experiences as human beings experience them. Any object, event, situation or experience that a person can see, hear, touch, smell, taste, feel, know, understand or live through is a legitimate topic for phenomenological investigation (Yanow, 2006). The aim is to describe human situations, events, meanings and experiences 'as they spontaneously

occur in the course of daily life' (Von Eckartsberg, 1998, p. 3) and use these descriptions as a foundation stone from which to discover underlying commonalities that mark the essential core of the phenomenon. Important founders of phenomenology as we know it today are the philosophers Edmund Husserl and Martin Heidegger. Whereas Edmund Husserl based reality on speculative, cerebral reflection, Martin Heidegger based reality on actual human experience taking place within the world of everyday life (Seamon, 2000). The latter approach is the one often encountered phenomenology today.

Just like phenomenology, symbolic interactionism examines the way people frame events and things. However, whereas a phenomenological perspective defines framing in a broader way that includes bodily, intuitive and emotional dimensions, the perspective of the symbolic interactionalist most typically emphasises the more explicit, cognitively derived layers of the framing process (Seamon, 2000). According to symbolic interactionism, people act toward things based on the meaning those things have for them; and these meanings are derived from social interaction and modified through interpretation (Wagemans, 1987). Herbert Blumer (1969), who coined the term symbolic interactionism, but also Erving Goffman (1959) - although he claimed not to have been a symbolic interactionist - are recognised among the major contributors to the symbolic interactionist perspective. Symbolic interactionist researchers investigate how people create meaning during social interaction, how they present and construct the self (or identity), and how they define situations of co-presence with others. One of the perspective's central ideas is that people act as they do because of how they define situations.

Hermeneutics, symbolic interactionism and phenomenology all share a common point of departure, namely, that human beings act on the basis of interpretations that arise out of social interaction. Where they differ is on the implications that this has for research. Whereas symbolic interactionists specifically focus in their research on the construction of meaning in interaction, hermeneuticists prefer to study human artefacts. Hermeneuticists argue that human meaning is projected into the full range of human artefacts (e.g., buildings, art, drama, texts, photographs, etc.). Therefore these artefacts should be studied to gain knowledge about those meanings. So, for hermeneutic thinkers, the focus of social scientific study is the cultural artefacts that people have created, rather than the social interaction and the associated framing processes (Prasad, 2002). In relation to interpretative analysis, hermeneutics is mostly associated with the thinking of Gadamer (1975).

An approach that is also related to these schools of thought is that of ethnomethodology. Ethnomethodology shares with the former approaches that it is a study of the ways in which people give meaning to their social world in interaction. However, whereas the other approaches focus more on the meaning and interpretation leading to the act, ethnomethodologists tend to focus more on the act itself. Conversation and the use of language are an important part of the performance of interaction, and therefore analysing conversations as an act is an important part of ethnomethodology (Atkinson, 1988). The approach was developed by Harold Garfinkel (1967) and Harvey Sacks (1972). It later developed into conversation analysis.

Phenomenology, social interactionism, hermeneutics and ethnomethodology hold several presuppositions in common, which provide the basis for interpretative research. To start with, we all live in a social world that is characterised by the possibility of multiple interpretations. In this world, there are no hard data whose meaning is beyond dispute. An interpretative approach therefore assumes that it is not possible for an analyst to stand outside the issue being studied, free of its values and meaning and free of the values and meanings of the analyst. It also assumes that knowledge is acquired through interpretation, which necessarily is subjective: it reflects the education, experience and training as well as the individual, familial and communal background of the analyst. Not only researchers, but all actors in the social world are 'doomed' to construct and interpret issues as they seek to make sense of the world around them (Yanow, 2000).

3.1.3 Judging the quality of interpretative research

In the research process, credibility and truth are always fundamental, central issues. Shapin (1995, p. 258) states: 'science, like finance, is a credit economy: these are activities in which, if you subtract credibility, there is just no product left. Neither a currency, nor a body of scientific knowledge.' Without credibility and truth, research becomes fiction and loses its utility. Scholars in science studies find truthfulness to be the outcome of contingent social and cultural practices. 'Knowing how to recognise truthfulness is knowing your way around a culture. There is no state of affairs outside the culture that uniquely determines what will be believed is the case within it' (Shapin, 1995, p. 260). What is true in one (scientific) culture may be untrue in another. So if we know the context and culture in which truthfulness is defined, it is possible to know which interpretation is good in that setting (but not necessarily more true). In this research, we follow Shapin (1999, p. 6) who states that 'for the sociologist the only proper way of engaging

with truth is through the study of what people collectively do: truth resides in the rule-guided institutional procedures for conceding it. In doing sociology, one should accept that there are no adequate grounds for establishing criteria of truth except the grounds that are employed to grant or concede it'. To build trustworthiness in the scientific context of interpretative analysis within which this PhD study is conducted, it will have to conform to the accepted rules and customs of interpretative analysis.

Yanow (2006) argues that traditional criteria for judging the quality of research, such as validity, reliability and objectivity, are terms that are perhaps relevant to traditional research but acquire a whole new meaning in relation to interpretative inquiry. Some interpretative researchers suggest adopting new criteria for determining validity in interpretative inquiry (Lincoln and Guba, 1985; Eisner, 1991; Maxwell, 1992; Lather, 1993; Riessman, 1993; Brower et al., 2000). Among these criteria, Lincoln and Guba's in particular have been very influential in the development of standards used to evaluate the quality of interpretative research. Because their criteria are now among the ones most widely used (Schwartz-Shea, 2006), we use Lincoln and Guba's criteria (Guba and Lincoln, 1982, 1989; Lincoln and Guba, 1985) to argue for the trustworthiness of our research. We now briefly discuss each criterion and explain how and to what extent this research meets it:

Credibility

In traditional research, credibility relates to the truth value of research. In interpretative research, it relates to the degree of confidence that the findings of a particular study have for the people with whom - and the context within which - the research was carried out, as well as for those who read it (Erlandson et al., 1993). Credibility can be built through prolonged engagement in the field, persistent observation and triangulation exercises, through asking for criticism on the research report by disinterested peer reviewers (Seale, 1999), as well as by writing a convincing story (Flyvbjerg, 2004). We will come back to this storytelling later on in the chapter. We first discuss prolonged engagement in the field. To ensure prolonged engagement in the field and persistent observation, we systematically collected our data over a period of three years (from September 2002 until December 2005) and continued to follow the developments in our case study area till December 2007 (more than five years). Because the realities that are included in this research are those that have been constructed by persons within the context of the study, we verified our interpretations of the data with those persons. Towards the end of this study, we started feeding back

our account of the Drentsche Aa situation to our interviewees. This allowed us to engage in discussion with them and obtain their feedback on our construction of the Drentsche Aa story. In this way, we tried to communicate with members of the Drentsche Aa community with whom the research was undertaken, but it was not a traditional member validation process. Member validation is often considered a way of using the views of the people on whom research has been carried out to check that the account has correctly incorporated differing perspectives (Erlandson et al., 1993). In this research, we did not focus on capturing a single reality as such but more on getting deeper insight into the multiple realities among our interviewees. Last but not least, we subjected our findings to the criticism of disinterested peer reviewers by presenting and discussing our finding during various relevant scientific conferences (see Appendix 1) and by publishing various articles and reports (see Appendix 2).

Transferability

Transferability traditionally relates to the extent to which findings can be applied to other contexts or settings (Erlandson et al., 1993). Transferability depends on similarities between our description and what other readers recognise in this description (both empirically and theoretically). Therefore we tried to collect and report sufficiently detailed descriptions to allow judgement from our readers about the applicability of certain observations in our case to their own situation. Hopefully, our readers will recognise at least parts of our story and be able to apply them to their own situation. The responsibility for demonstrating transferability lies with our readers, but, by providing them with a thick description, we have tried to facilitate this process (see also section 3.2.1 on case study research and generalisation). We were offered an insight into the extent to which others recognised our theoretical interpretations during the conferences and seminars at which we presented and discussed our findings (see Appendix 1). For example, we presented our findings during a practitioners conference [8] organised by the Ministry of Agriculture, Nature Conservation and Food Quality (Min. of LNV) on interactive policy making. At our presentation, there was an audience of about 40 people who were all professionally dealing with new forms of governance. After a short five-minute introduction, a professionally facilitated discussion followed (55 minutes) in which the audience was invited to respond and ask questions. This conference showed that a lot of people recognised at least parts of the story. As one provincial official said: 'I am so glad

8 Meeting of practitioners and policy makers Leren van een veranderend land held on 7 February 2007 in Maarssen.

to hear that other provinces are struggling with these issues too. Apparently we are not the only ones'.

Dependability

Dependability traditionally relates to the extent to which research can be replicated to yield the same results. It therefore relates to variabilities which are often ascribed to errors (Erlandson et al., 1993). In this research, we believe that variabilities between researchers are not necessarily the result of errors but may also be attributed to different constructions of realities among researchers. Also, the presence of a researcher already influences the situation, making it different from what it was before. As Heraclitus said back in 420 BC: 'No man ever steps in the same river twice, for it's not the same river and he's not the same man' (Brooks and Hillman, 2001). However, we do believe it is important for researchers to make their methods explicit. To give insight into our methodology, first of all, the interviews were taped and transcribed. Instead of taking notes for the reconstruction of the general sense of what people said, we used these transcriptions as the basis for our analysis. This allowed us to preserve data in a relatively raw form, although we realise that transcribing interviews also already involves choices (e.g., we chose *not* to transcribe pauses or intonations as a conversation analyst would have). In the story we tried to show the data to the reader as much as possible. We did this by using original quotes as illustrations to expose the reader to the data. In addition to this, we have tried to be as open as possible with regard to the procedures that led to a particular set of conclusions. Although we realise that it is impossible to be completely reflexive because one cannot be aware of one's own biases (Turnhout, 2005), still we have tried to be as clear and open as possible with regard to the choices that we made and what informed them.

Confirmability

Confirmability traditionally relates to objectivity or to the extent to which findings are the product of the focus of inquiry and not of the biases of the researcher. According to Flyvbjerg (2004), it is not possible for social scientists to claim this kind of objectivity because the history and philosophy of social science show empirically that objectivity of that kind does not exist. In fact, it is not possible for any scientists (Collins, 1981). All we can do as (social) scientists is investigate cases from a variety of perspectives and interpretations. That is exactly what we did. We realise that if the significance of our interpretation cannot be measured against any external objective reality, it will depend on the extent to which our claims are presented in a convincing way.

Acceptance of our interpretation will occur in competition with other claims and interpretations of other people. Our interpretation has no special status, so if and when our arguments carry any special weight it will probably derive, not from having access to a special type of objectivity, but from having spent more time in the field and/or being better trained at telling a rich, well grounded and persuasive story that includes many perspectives and interpretations.

Although we have discussed how this research meets the criteria for trustworthiness of interpretative research, we are also aware that these criteria cannot guarantee it. According to Shapin (1995), there is no limit to the considerations that might be relevant to securing scientific credibility: the plausibility of the claim, the believed reliability of the methods used to produce the claim, the quality of the story, the personal reputation of the researcher or the discipline to which he/she belongs, knowledge of friends or the scientific community of the researcher, the likely consequences for the reader who does not believe the findings, the researcher's experience and expertise, the researcher's sex, age, race, religion, or nationality, etc. Any aspect with which credibility is accomplished can prove to be relevant, nothing can be ruled out in advance. Shapin (1995) warns us to be suspicious of simple and global credibility stories of whatever sort. He shows us that there can just be no theory on how credibility is achieved in any form of science (whether social science or natural science). At the same time this does not lessen the importance for us of presenting our research in a way that we believe to be credible and convincing within the scientific culture in which we are operating.

3.2 Research design

3.2.1 The case study design

In this research, we started out with the problem that a specific process of social learning in the Drentsche Aa did not work as expected. We developed a theoretical framework on the nature and role of experts and expertise in relation to governance. This study is not about linear cause-effect relationships because these cannot explain what is happening in complex social situations (Lincoln and Guba, 1985; Argyris, 1994; Pepper, 1995; Dörner, 1997; Ashmos et al., 2000). Lincoln and Guba (1985, p. 37) argue that 'all entities are in a state of mutual simultaneous shaping...it is impossible to distinguish causes from effects.' Mutual simultaneous shaping, or contingency, means that all things influence each other and that causes and effects are inextricably

intertwined (Guba and Lincoln, 1982). In this research, we take complexity and contingencies as starting points. Rather than using large samples and following rigid protocols to examine a limited number of variables, this study requires an in-depth, longitudinal examination of a single instance or event: a case. Hence, a case study approach was chosen as an appropriate research design.

The advantage of the case study is that it can home in on real-life situations: by placing ourselves within the context being studied, we learn to understand the viewpoints and the practices of the actors being studied. A case study provides a systematic way of looking at events, collecting data, analysing information and reporting results. This allows us to gain a sharpened understanding of why certain instances happened as they did (see Yin, 1984). Case studies can very well be used for multi-perspective analyses in which the researcher considers the perspectives not just of the actors, but also of the relevant groups of actors and the interaction between them (Tellis, 1997). This fits in very well with our interpretative methodology.

It is a frequent criticism of case study research that one cannot generalise on the basis of an individual case. Related to this is the criticism that it is often difficult to summarise and develop general propositions and theories on the basis of specific case studies. Therefore it is often argued that the case study is most useful for generating hypotheses, that is, it represents the first stage of a total research process, whereas other methods are more suitable for hypotheses testing and theory building. To discuss this argument, we return to Popper (1954) and his view on science. Popper is known for advancing empirical falsification: no number of positive outcomes of research can confirm a scientific theory, but a single counterexample can show the theory from which the implication is derived to be false. For Popper, falsifiability is the main criterion of demarcation between what is and is not genuinely scientific: a theory should be considered scientific if and only if it is falsifiable. A strict consequence of falsification is that it is impossible to verify truth claims. Truth claims can only be falsified. Flyvbjerg (2006) applied this argument to case study research. In relation to the issue of generalisation, Flyvbjerg convincingly rejects the criticism that it is not possible to generalise from case studies. He argues that the extent to which one can generalise from a single case depends on the case itself and how it is chosen. This applies to the natural sciences as well as to social sciences. To illustrate that cases played a major role in the development of natural sciences too, he recounts Galileo's rejection of Aristotle's law of gravity which was not based on observa-

tions across a wide range, and the observations were not carried out in great numbers. The rejection consisted primarily of a conceptual experiment and perhaps later on of a practical one. Although historians of science continue to discuss whether Galileo actually conducted the famous experiment from the leaning tower of Pisa or whether it is simply a myth, what is important now is that Galileo's experimentalism did not involve a large random sample of trials of objects falling from a wide range of randomly selected heights under varying wind conditions and so on. If it was conducted at all, it was a case study. So Galileo used a single case study to reject Aristotle's law of gravity. By showing that Aristotle's law of gravity did not apply in the tower of Pisa case, he was able to analytically generalise on the basis of a single case study. According to Flyvbjerg (2006), case study research can very well be limited to a single case which represents a carefully selected illustration of the phenomenon studied. In social sciences, in a similar way, the case study is ideal for analytic generalisation. In analytic generalisation, previously developed theory is used as a template against which to compare the empirical results of the case study (Yin, 1984). In relation to generalisation, the case study uses the logic of analytic rather than enumerative generalisation. The researcher carefully selects one or a few cases to illustrate an issue, to analytically study it in detail and/or contribute to existing theory. This makes the case study a perfect design to contribute to scientific debate.

However, for Popper, the empirical data on the basis of which falsification could be claimed were a form of proof. He assumed objectivity in the sense that he took the object of study to have a certain agency (it tells us whether something can be falsified or not). On the basis of Collins (1981), we argue that empirical data themselves do not 'speak'. Collins' notion of 'experimenters' regress' makes clear that it is impossible to determine whether an observation is the consequence of a phenomenon or the consequence of the methodology. The outcome of a phenomenon that is studied is always uncertain and, in these situations, judgment about what matters requires interpretation. When a scientist carries out research that yields results, he can never be sure whether these are the results he had expected. The results look good because he knows the research he carried out was right. The scientist, in other words, has to get the right results in order to know that the methodology works, or to know that the methodology is working, to get the right results. According to Collins, there are no purely cognitive reasons or objective criteria that determine whether a claim is valid or not. In practice, the regress is broken and closure is achieved by social negotiation between scientists in the respective field. It is

always the researcher who observes and interprets the empirical data and claims falsification on the basis of this observation and interpretation. Falsification is then a construction of the researcher and not the consequence of an objective reality. It is on this point that we depart from Popper.

3.2.2 Case selection

In the previous section, we discussed the relevance of a case study design for this research. In this section, we discuss the way in which we selected the area in which we wanted to carry out the case study research.

According to Neuman (2003), determining what to treat as a case is an interplay between the research object and the researchers' ideas about it. Cases are, in that sense, not pre-established units or categories: they are defined by the researcher by comparing data with theory. Most interpretative researchers are already in the field in some sense when they begin their research on a policy issue (Yanow, 1996). In our situation that was the case as well. Because of the SLIM study, we were already familiar with the situation in the Drentsche Aa before this PhD research was started there. We were already in the field in some sense. The situation that we encountered in the field puzzled us: social learning in the Drentsche Aa did not look like we had expected it to. There was a mismatch between what we encountered in the field and what we had expected to find on the basis of theory. 'Usually a problematic relation between theory and data is involved when a case is declared' (Ragin, 1992, p. 218). That is what happened in this research too. We stumbled across the Drentsche Aa case and found it interesting because it provided us with a puzzle.

The Drentsche Aa case intrigued us, and so we decided to carry out research on it. On the basis of our SLIM research, we took it to be an extreme case because the social learning involved in it looked so different from what we had heretofore seen in the literature. The multi-actor platform was not functioning as we had expected it to: there was no co-production of knowledge. This case study developed into a study of how the nature and role of experts and expertise is constructed and negotiated in different governance contexts in the Netherlands over time. The Drentsche Aa case was particularly well suited for addressing this theme because it developed hand in hand with our growing knowledge of the empirical reality. The material revealed important information because it activated a lot of basic mechanisms in relation to the nature and role of experts and expertise in different governance

contexts. On the basis of the literature (see Chapter 2), we had to take into account that governance might be less straightforward and clear cut than often assumed. By studying a longer period of time, we hoped to obtain insight into the relation between governance and the nature and role of experts and expertise in the Drentsche Aa area.

3.3 Data collection

According to Yanow (2000), the data of interpretative policy analysis are the words, symbolic objects (e.g., policy documents) and acts of policy-relevant actors along with the meanings that these have for them. What was collected are interviews (taped, noted or both), observations and interpretations (noted), and copies of relevant documents.

3.3.1 Interviews

Our first source of data was the interview. According to Erlandson et al. (1993), interviews are a valuable source of data. They allow the researcher and respondent to move back and forth in time, to reconstruct the past and to interpret the present. They are useful in discovering what people think, how the perceptions of one person compare with the perceptions of another, and in putting the varying perceptions into a larger context.

Interviews take a wide variety of forms, from very open-ended to highly structured. In this research, we used semi-structured interviews guided by a list of topics and issues that we wanted to discuss with our respondents. Before starting the interviews, we gave much thought to preparing the conversations. We made sure that we shared a vocabulary with our respondents. Therefore we had to translate scientific terminology such as governance or boundary work into terms that were common to our respondents and their culture. To make our questions fit in with the lifeworld of the respondents, we tried to make the topic of the conversations as concrete as possible. The first interviews primarily focused on identifying the key policy events that our respondents perceived as being important for the Drentsche Aa area to become what it now is. Over time, the character of the interviews changed. When we had a basic idea of these key events, we used them to structure our subsequent interviews. We listed all relevant developments in the area in advance, and during the interviews we specifically asked our respondents about them in relation to the governance context, experts, expertise and boundary work. We asked questions such as 'What exactly happened?', 'Where and when did this take place?',

'Who was involved, who was not involved?', 'What did they do and why?', 'What were the consequences of this?' (for an overview of the interview guide see Appendix 3). These questions invited the respondents to tell their story. On the basis of the answers, we showed interest and probed the actors to give more information and detail. Although we had defined a number of topics in advance, to a large extent we allowed our interviewees to determine the course of the conversation to allow questions to emerge naturally over the course of the interview. However, when the interviewee added no further information, we introduced themes and asked the interviewee to respond to them. It is by no means certain that our respondents reconstructed the situations as they really happened. Knowledge of the present and changes over time can distort how events and people are remembered. For us this was not a problem, because in this study the interviews were not meant to be comparable. Rather, we tried to capture the diversity in interpretations and to get a better understanding of the context in which these interpretations developed.

Altogether, we engaged in 74 interviews, each lasting between one and one and a half hours. (See Appendix 4 for the list of actors interviewed.) We used the first interviews as a preliminary exploration of the study to find out whether the Drentsche Aa situation was indeed as interesting as we thought it was on the basis of our earlier SLIM research. These first interviews were not taped. Instead, notes were taken during the interviews and used as a basis for remembering the conversation when writing it up afterwards. After this initial exploration, we started a more thorough research process in which we conducted a number of interviews which were taped and transcribed literally. During these interviews, we talked to all kinds of actors who are or were involved in the policy process in the Drentsche Aa area between 1960 and 2005. So, we contacted the actors who played an important role during the events in the past, but we also talked to the actors who play an important role now. For example, we talked to farmers, villagers, State Forest Service representatives, provincial officials, representatives of the Water Board, the chairman of the multi-actor platform, etc.

As already mentioned, most interviews were tape recorded to make sure that everything said was captured. This prevented us from afterwards misremembering what had been said. Listening to the tape afterwards while transcribing the interviews helped us to reflect on ways to improve our interview strategies. Before starting an interview, we always asked our respondents for permission to tape the interview. No one objected to this. It is often argued that a disadvantage of taped

interviews is that the respondent is sometimes self-conscious or overly aware of the recorder (see Erlandson et al., 1993). In this research, we found that note taking (with which we experimented in the beginning) was more intrusive in the interview than tape recording. Taking notes interfered much more with the natural flow of talk than a tape recorder, and our respondents were more conscious of what they said because they were constantly being reminded that we were taking notes. We noted that, when only a tape recorder was used, after a while our respondents tended to forget about it, only to be reminded of it again when the tape was full and needed to be changed. Furthermore, we found that taking notes during the interview also diverted our own attention away from what was being said. Therefore we decided to tape our interviews.

In this research, we were well aware that selecting good interviewees was important, because the perspectives of informants would greatly influence the development of our insight into, and our understanding of, the situation. As Guba and Lincoln (1989) advise, respondents were selected one at a time and contingently (based on what was learned from previous respondents). Our first informant was chosen because of his prominent place in the formal and informal negotiation structure. After interviewing this individual, we chose a second respondent with the help of the first respondent on the basis of what was learned from the first respondent. This process of snowball sampling was repeated every time a new respondent was being chosen. At first, respondents were chosen because they were thought to be able to introduce new issues or events in addition to our understanding of the situation. Later in the process, respondents were chosen for their perceived ability to elaborate on issues or events that had already been introduced. For example, when someone was labelled as an expert at a certain point in time, we made sure that we interviewed this perceived expert. After that, respondents from stakeholder groups that had not yet been interviewed were chosen to ensure that as many groups of people as possible had the opportunity to contribute their interpretations. After the first round of interviews was completed, another round of interviews was conducted. Some early respondents were interviewed a second or even a third time and asked to respond to the constructions of others. Towards the end of the study, we started feeding back our account of the Drentsche Aa situation to our interviewees to allow it to be exposed to the same degree of criticism that our respondents afforded to the constructions of other informants. The process of interviewing, analysing and identifying new respondents continued until information became redundant.

3.3.2 Observations

Our second source of data was observation. According to Erlandson et al. (1993), observations are an important source of data collection for qualitative social science. In the field, we paid attention to what was happening, watching and listening carefully. We were intrigued and curious about details that could reveal what was going on there. We were sensitive to these details because they might reveal something significant. Our point of departure was that, if these details were not noted, then they would be lost without knowing whether they would be important for a full understanding of the event. Most of the time we did not know the relevance of what we were observing until later. Therefore we kept taking notes even when nothing seemed to be happening.

Whereas interviews allowed us to travel, as it were, back and forth in time, observations allowed us to discover the here and now of the Drentsche Aa situation. Observations provided us with additional data that interviews could not provide, e.g., the emotional reactions of people at meetings. This helped us to understand the world as our interviewees saw it and experienced it. It also gave us insight into the experiences on which our interviewees constructed their realities, apart from what they told us themselves. We observed approximately ten debates, meetings and/or information and discussion evenings. Our main role at those events was that of information gatherer. We were observers rather than participants in an ethnographic sense.

Much has been written about the importance and methodology of interviews, but comparatively little attention is given to the art of observation in handbooks on qualitative inquiries. To structure our observations during our fieldwork, we used the checklist developed by Merriam (1988) (see Box 3.1).

Box 3.1: Checklist for observations during fieldwork

1. **The setting**
   What is the physical environment like? What is the context?

2. **The participants**
   How many people are present? What is their role? What brings them together? Who is allowed to be there? Who is not?
3. **Activities and interactions**
   What is going on? Is there a clear sequence of activities? How

do people interact with each other? How are people and activities connected?

4. **Frequency and duration**
   When did the event begin? How long does it take? Is it a recurring event or is it unique? If it recurs, how frequently? How typical of such situations is the one being observed?

5. **Subtle factors**
   Informal or unplanned activities/interaction? What does not happen, especially if it ought to have happened? Non-verbal communication such as emotionally charged situations, expressions, etc.

During our fieldwork, we carefully scrutinised the physical setting to capture the atmosphere. We paid attention to, e.g., the size of the room, how the furniture was arranged and in what condition it was, the sounds and smells, whether the room was airy or hot and stuffy, etc. All these details helped us to capture the atmosphere that was created. In addition to the physical environment, we also observed the people, their actions and interactions. We paid attention to peoples' age, sex, stature, probable occupation, etc. We were also sensitive to the physical appearance of people such as dress style, neatness, etc. We considered people's actions to be significant. We noted where and how people sat, stood or walked, because this allowed us to get a grasp on their non-verbal communication and feelings (e.g., people sitting stiffly, their facial expression, people standing close together, etc.). We also paid attention to the context in which the event occurred. We noted who was present, who arrived or left the scene, what happened, when and under what circumstances. These observations yielded a set of notes on settings, individuals, groups, interactions, etc.

It was often difficult to record everything during the event itself. Sometimes we could not take notes in the field at all. It would just have looked strange if we had been furiously writing down notes at some meetings. Also, we noticed that taking notes during events distracted our attention from what was going on around us. Therefore some of our notes were written up afterwards. Although we tried to write down as many details as possible, we found that sometimes it was really difficult to remember absolutely everything afterwards. Handbooks on research methodology advise researchers to write down notes immediately after leaving the field. In our case, this was not always possible

(e.g., information evenings sometimes finished late at night making it impossible to sit down in a dark car to write down our observations). Furthermore, writing down all the observations took a lot of time that sometimes was just not available because of different calls on our time. All in all, the level of attention required and the conditions in the field affected the quality of note taking.

After writing down the observations, we decided about how to proceed with the fieldwork. Sometimes we decided to follow up on the observations by planning an interview, but we sometimes also decided to observe another event.

3.3.3 Documents

Documents constituted our third source of data. In this research, the term document refers to a broad range of written records. Documents include practically anything in existence, including historical or journalistic accounts, memos, newspapers, brochures, agendas or transcripts of meetings, notes, policy documents and research reports or scientific articles. The data obtained from documents were used and treated in the same manner as data derived from interviews or observations.

At the beginning of this research, we carried out a literature search on the Drentsche Aa area. We used the libraries of Wageningen University, of Groningen University and of the regional State Forest Service of Drenthe as a starting point. This gave an overview of more than 382 documents that had been published on the Drentsche Aa area. To find out which documents would be relevant for us to collect and analyse, during the interviews we asked our respondents to name the documents that they considered important to the policy events. These documents (research reports, policy documents, articles, etc.) were collected and analysed. In total, about 75 documents were analysed (see Appendix 5). These documents served as background information to better understand the situation or the events. Not all respondents identified the same documents in relation to the same events. Therefore, the documents also gave us insight into the respondents' construction of the event.

Furthermore, a systematic media analysis of two regional newspapers (the *Drentse Courant* and the *Nieuwsblad van het Noorden*) was carried out. We chose to analyse the regional newspapers because discussions about the Drentsche Aa mostly have a regional character. Therefore it was assumed that most articles could be found in regional papers. Both newspapers were systematically scanned for information on the

nature policy process for a period of over 40 years (1960 to 2006). We were assisted by three students: Rob den Boer (see Den Boer, 2006), Maurice ten Tije (see Ten Tije, 2006) and Aster Wijsman (see Wijsman, 2008). This resulted in an overview of 170 articles (see Appendix 6). About 90 articles originated from the *Drentse Courant*, about 40 articles originated from the *Nieuwsblad van het Noorden* and about 40 articles originated from the *Dagblad van het Noorden* into which the two newspapers merged in 2002. All newspaper articles were photocopied or photographed (when not allowed to be copied) and stored in folders to be analysed at a later stage.

Last but not least, we collected correspondence, memos, meeting protocols, transcripts of meetings, notes and reports in the archives of the Province of Drenthe and in the archive of the Drenthe regional State Forest Service. These documents represent primary sources of information. We copied them and retained them for future analysis.

The documents served as background information to better understand what the important events were over time as identified by the respondents, what happened during these events, why, where, who was involved, how the events happened. So, the documents provided insight into the policy outcome to which people's involvement had led, and into the policy processes needed to arrive at this outcome. The information from the documents added complexity, richness and depth to our understanding of the situation. It allowed us to view the events and situations from an additional angle as compared to the interview angle or the observation angle.

3.3.4 Triangulation

Triangulation refers to combining multiple theories, methods, observers and empirical materials to produce a more accurate, comprehensive and objective representation of reality. The most common application of triangulation is the use of multiple methods. This assumes that, by looking at an object from more than one standpoint, it is possible to produce a truer and more certain representation of reality (Seale, 1999).

In this research, we collected data in multiple ways (interviews, documents, observations). However, we did not do this to use one account to undercut another, because we were interested in what reality looked like from different perspectives. These perspectives cannot be merged into a single, true and certain representation of reality. Triangulation cannot give us objective truth with regard to these issues. Rather, we

used triangulation to enhance meaning through multiple sources in order to create a thick description by adding complexity, richness and depth to the research (see Silverman, 1993).

In practice, this means that we treated data sources as dependent on each other. For example, we took interviews and observations to have a reciprocal relationship similar to the relationship by which language and experience enrich and inform each other. Through interviews, we could gain a first insight into the constructed realities of the respondents, e.g., by asking them about their perception of the regional multi-actor platform. Through observations, we could gain a view of the experience on which the respondent constructed those realities, e.g., by joining one of the public meetings of the regional multi-actor platform. Observation suggested probes for interviews, and interviews inspired new observations. The interaction of the multiple sources of data not only enriched them all but also provided a basis for analysis that would have been impossible with only one source (see Erlandson et al., 1993).

3.4 Analysis

3.4.1 Iterative process of data analysis

The analysis of qualitative data has been described by some authors as a progression, not a stage; as an on-going process, not a one-time event. The analysis of the data begins on the first day the researcher arrives at the setting. The collection and analysis of the data obtained go hand in hand as themes emerge during the study (Erlandson et al., 1993).

Flyvbjerg (2004) states that inquiries begin with an interest in a particular phenomenon. That is how this research started too. As already stated, we started this research because we were puzzled by the situation that we had encountered in earlier research. We began with a general interest in social learning processes. On the basis of this interest, we started out with a conceptual framework comprising sensitising concepts. These concepts were used to make sense of empirical data and signal important issues. We then needed additional theory to understand what we were observing, etc. So we did not start this research in a theoretical vacuum or without any contextual knowledge of the Drentsche Aa area. On the basis of this provisional contextual knowledge, we started our sensemaking process and engaged in further inquiry, this again informed our sensemaking process and so on. We continued moving in an iterative fashion from the field (data collection) to analysis to research question to conceptual framework to study design and so on (see Figure 3.1).

Many of the steps in the research process overlapped in practice: deskwork (establishing the analytic question, developing the theoretical framework, designing the study, analysing the data) took place while fieldwork (identifying the policy events, the actors involved, their relation and interaction, etc.) was in progress. During the study, the analytic question as well as the theoretical framework were re-conceptualised several times until we had finally translated our interest in social learning into the conceptual framework on experts, expertise, boundary work, and governance contexts.

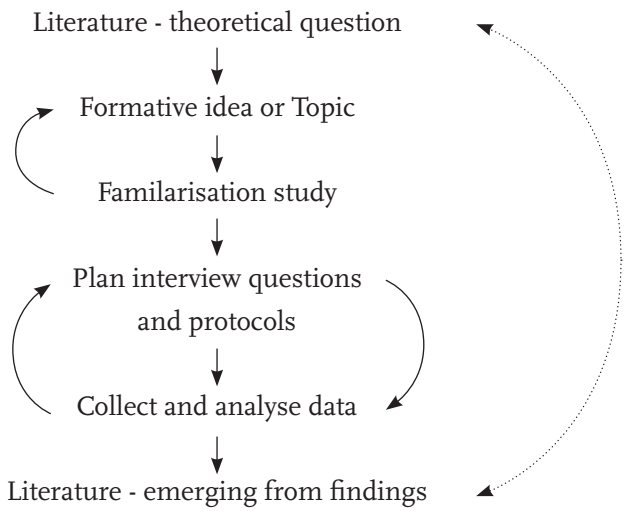


Figure 3.1: An iterative research design (after Whitely and Whitely, 2005).

We went through a series of loops of empirical work, analysis and reflection, which in turn inspired empirical work. In retrospect, we can make a conceptual distinction between a number of loops through which we went:

1. We identified the important events and policy documents relating to nature conservation policy in the Drentsche Aa area, as well as the groups of people who were relevant to these events and policy documents.
2. We identified the way in which these groups of people framed issues and events.
3. We identified the conflicting frames between or among groups.
4. We showed how the groups interacted and what the consequences of these interaction were. In practice, the loops in this research often overlapped and became intermeshed.

This research is therefore both case-informed (relying on case-based knowledge) and theory-informed (relying of theoretical knowledge). In other words, we developed the conceptual insights during data collection and analysis. Conceptualisation and operationalisation occurred simultaneously with data collection and preliminary data analysis. Theoretical observations suggested future data collection. New data came from thinking about previous data. Analysis of early data contributed to new emphases in data collection, and the new data collected produced new analyses. Because of the iterative character of this research design, our ideas and evidence became mutually interdependent (see Neuman, 2003).

3.4.2 The narrative analysis

Our perspective has consequences for the way we report our case study. As we have already stated, we realise that if the significance of our interpretation cannot be measured against any external objective reality then the credibility of our interpretation will depend on the extent to which our claims are presented in a convincing way. We feel that the credibility of a case study can be greatly enhanced by telling a rich, grounded and persuasive story. According to Geertz (1988), good case studies often contain a substantial element of narrative. The human being is a story-telling animal, and storytelling is an ancient method and perhaps our most fundamental form for making sense of experience (Flyvbjerg, 2004).[9] People tell stories to entertain, to teach and to learn, to ask for an interpretation and to give one. Ethnographers have for a long time been recommending story writing to help readers understand and critically evaluate an account (Geertz, 1988). A narrative is a very good way of reporting an interpretative analysis. The concern with meaning in an interpretative approach requires renewed attention to the role of stories or narratives as conveyers of meaning. If narratives are a common mode of communication, then a narrative way of reporting allows messages to be conveyed in a meaningful way. In their telling, narratives become, themselves, sources of meaning. Yanow (1996) argues that, to a certain extent, the quality of interpretative analysis depends on the policy analyst's skills as translator-storyteller. A good narrative can make an important contribution to the credibility of an interpretative analysis. Case stories written like this become a virtual reality, so to speak. For the reader willing to enter this reality and explore it inside and out, the payback is a sensitivity to the issues at hand that cannot be obtained only from theory (Flyvbjerg, 2006).

9 This is not an ontological claim; life may or may not be a narrative, but we feel that conceiving of it as such provides a rich source of insight.

The construction of stories is hard work because stories do not and cannot tell themselves. Stories have to be narrated, in writing or orally (Flyvbjerg, 2004). One way or the other, they require a narrative analysis, and this means that choices have to made if only about where to begin and end the story, what to emphasise and so on. This selectivity means that we do not produce a mirror image of what we heard and saw. The story itself is a way of framing, and our story is an account in which our own interpretative frame is embedded (see Yanow, 1996).

In this sense, narrative analysis is a double-edged practice. In this research, on the one hand we looked for the framing of expertise while, on the other hand, we constructed our own narrative. After the data from interviews, observations and documents had been collected, the process of directed and intensive analysis began, during which we immersed ourselves in the details of the data and read and reread our material. Our increasing familiarity with the subject matter led us to construct patterns and connections. We interpreted our data by giving them meaning, translating them or making them understandable. The meaning that we gave to our data started with the point of view of the people we studied. We interpreted data by finding out how these people saw the world over time, how they defined the situation, or what it meant to them and, on the basis of this, we constructed their own story (Neuman, 2003).

So the first step was to learn about the meaning of events to the people being studied. We then tried to find the underlying sense of meaning in the data. This meaning was developed within a set of other meanings, thereby necessarily placing the practices we studied in relation to other events (the context). After that, we tried to link our interpretations to general theory (after Neuman, 2003). Our interpretations were first conceptualised in the form of an unfolding plot about particular people and specific events (plot 1). However, for an academic narrative this is not enough. An academic narrative must have a conceptual plot (plot 2) in addition to an empirical plot (plot 1). So, second, our interpretations were conceptualised in the form of an unfolding plot about concepts and theory (Flyvbjerg).
We analysed our data and constructed plot 1 according to Flyvbjerg's[10] 'narrative turn in research methodology'. Plot 1 tells the story of people's intentions and action, and situates them in time and space. We focused on time, place, actors, actions, consequences and context to structure events into a narrative. In the analysis we started by presen-

10 Communicated during the course 'Narrative turn in research methodology', Aalborg, November 2006.

ting the concrete details of the study in a chronological order as if they were the product of a unique and naturally unfolding sequence of events. This sequence of events follows from the three key events that our respondents identified as being most important in the history of the Drentsche Aa area. These three events became our three results chapters. In other words, we simply told a story of what happened first, second and third. In this story, we stayed close to reality and we described real-life practices in their specific context. In each chapter, we wanted to tell 'how this happened' in addition to 'why this happened'. When writing down the story, we constantly asked ourselves 'who did what to whom, when, where, how, why and with what kind of consequences?' to capture as much detail as possible. The passage of time is integral to our chapters. All the time, story telling is key. Therefore, each chapter has a plot 1 with a beginning that sets the scene, a middle that discusses a tension/conflict for which a resolution is not obvious and an end that is inspiring. From the beginning, we hook the readers to the story by setting the scene in terms of actors, place and time ('On an autumn day in 1962 a group of high level officials was gathered for a field trip to the Drentsche Aa area.'). Then the tension is built up ('From the very outset, the stakes were high…' 'Something never tried before…'). At the end, the chapter is tied up; we construct a clear ending ('From this point onwards…'). As the narrative unfolds, the story moves from providing general information to providing in-depth information and then back to general information again. That is how plot 1 was constructed.

Like empirical plot 1, plot 2 was developed according to Bent Flyvbjerg's narrative turn in research methodology. We developed conceptual plot 2 by moving from the description of the events to a more general interpretation of their meanings. We did this by reading through the empirical story and constantly asking ourselves what this could mean relative to the concepts and other theories. While studying the cases, for example, we first asked: 'What does this event tell us about governance?', 'Can we see processes of boundary work happening here?', 'Who are framed as being the experts?', 'How do they frame expertise?', etc. By organising our data while analysing and applying our ideas simultaneously, we created a second plot. The analysis stayed close to the original data and context, but the subsequent interpretation is more than a simple description. The analysis organised specific details into a coherent picture or set of interlocked concepts. It is the conceptual interpretative element that created the conceptual plot. Just like plot 1, the construction of plot 2 also has a strong narrative element. Therefore plot 2 has a conceptual hook and tie. The conceptual hook was constructed by discussing the concepts at a high

theoretical level, e.g., by going back to authors such as Shapin, Gieryn, Hajer, Yanow, Flyvbjerg. A conceptual tie was constructed by returning to the original literature at the end of the story and discussing it in the light of the conceptual findings. This story became plot 2.

Finally plot 1 and plot 2 were woven together and the story continuously switches from plot 1 to plot 2 ('Let us now turn to the conceptualisation of this story in terms of…') and back to plot 1 ('The story of the Drentsche Aa area continues with…'). When plot 1 and plot 2 were being weaved together, a rich story developed, consisting of an interpretation of the descriptions that the actors, media and documents gave us. This is how we have tried to show the reader not only the empirical data (plot 1) but also the interpretation of it (plot 2) as well as the how and why of the interpretation.

The result of the analysis is a story that can be characterised as an interpretation of the nature and role of experts and expertise in different governance settings. The story is interpretive, but it is neither everyday nor deeply hermeneutic. Like a traveller telling about a foreign land, the account is also not emic. It is an etic interpretation that aims at offering valuable insights to the reader with regard to governance and the nature and role of experts and expertise. Neither is the story about, nor does it try to develop, theory or universal method (after Flyvbjerg, 2004). Rather, as stated before, our goal is to produce input for the ongoing dialogue and discussion in relation to social learning, and not to generate ultimate, unequivocally verified knowledge. We hope that the reader will evaluate what we say against his or her own experience, will argue with us when what we say does not fit, and, best of all, will join the public discussion by offering interpretations superior to ours that can then lead to further discussion.

4

The Drentsche Aa area as a nature reserve (1960-1975)

'Heer Bommel voelde zich één met de grootse natuur, en reusachtige mogelijkheden ontvouwden zich in zijn brein, zonder dat hij precies wist welke.'

Toonder, 1981a [11]

4.1 A plan for nature conservation: the *Gedachtenplan*

On an autumn day, 28 November 1962, a group of high ranking officials [12] gathered together for a field trip into the Drentsche Aa area. They were curious because they had been told by representatives of the State Forest Service - Edgar Stapelveld and Harry de Vroome - that this was a very special area with high biodiversity values and many rare plant species (see Picture 4.1). This biodiversity was severely threatened by land re-adjudication (see Box 4.1) and development procedures (*ruilverkavelingen*), which were rapidly changing the appearance of the countryside. The Drentsche Aa, so they explained, in fact represented an antique farming landscape. Due to cultivation

11 *Sir Bommel was feeling at one with the grandiosity of nature and enormous possibilities started to develop in his brain, without him knowing exactly what they were.* - Toonder (1981a)

12 Members of the Provisional Council for the Protection of Nature and representatives of the Province (including the Commissioner of the Queen).

Picture 4.1: Amerdiep at Amen circa 1960. Picture taken by Edgar Stapelveld.

of natural areas (such as heath fields or bogs), water retention in the area had decreased, causing the brooks of the Drentsche Aa to regularly overflow. This had reduced agricultural productivity and thus the agricultural value of the meadows. Therefore the government had planned land developments to fight flooding of agricultural land and to maintain productivity and competitiveness in farming. The State Forest Service officials feared that land development would totally reconstruct the landscape and destroy its biodiversity values, through land improvement, farm replacement, drainage, canalisation, plot redesign, etc.

Box 4.1 Land re-adjudication

Land re-adjudication was an instrument that was used during most of the 20th century to modernise Dutch agriculture. Before the Second World War, Dutch agriculture, and especially that on sandy soils, was characterised by a dominance of small farm holders. Land re-adjudication was designed to improve the fragmentation of agricultural plots and help farmers produce their goods more efficiently. Just after World War II, there was a strong awareness of the importance of food security and a general urge to rebuild and expand agriculture (Van Dijk, 2004). Land re-adjudication stimulated farmers to increase, mechanise and rationalise their farms. In addition to actual land exchanges, the improvement of road infrastructure and water management, and other functions necessary for the objectives were implemented in land re-adjudication (Vitikainen, 2004). It was thought that this would increase agricultural production and, consequently, result in higher incomes for farmers. By choosing as its strategy for survival the production of bulk products for export markets (and not, for example, survival through multiple job holding, or through production of local quality products), the Dutch agricultural sector deliberately jumped on the 'agricultural treadmill' (Cochrane, 1958; Hubert et al., 2000; Röling, 2002) as part of the European Mansholt Plan. Since the 1960s, the number of Dutch farms has decreased from 250,000 to barely 60,000 full-time farms today, but meanwhile the proportion of the Netherlands dedicated to farming has remained the same (about 60%), and the total amount of produce has also remained the same. This shows the extent to which farming has increased in scale. The land re-adjudication procedures had a tremendous impact not only on farm productivity, but also on water quality, water levels, landscapes, biodiversity, nature reserves, culturalhistory, air quality, acidification, deposition of nitrates and so forth (Van Bommel and Röling, 2004).

In 1958, the Rural Engineering Service [13] started designing and specifying plans regarding the rationalisation of streams and brooks in the Drentsche Aa catchment area, with the intention of straightening out the meanders (see Picture 4.2). The State Forest Service officials feared that this would pose a major threat to the preservation of the biodiversity-rich water meadows.

13 Rural Engineering Service (*Cultuurtechnische Dienst*): an organisation that implemented the decisions of the Central Land Consolidation Commission. It had a staff of technical engineers in all provinces. The director of the Rural Engineering Service was secretary of the Central Land Consolidation Commission.

During the field trip, the State Forest Service representatives explained that they felt that something needed to be done to conserve the unique landscape. Rather than Sir Bommel, it was Edgar Stapelveld and Harry de Vroome in whose brain enormous possibilities started to develop, without them knowing exactly what they were. Edgar Stapelveld remembers:

> *We organised a meeting and a field trip, inviting the Provincial Council.*[14] *We had also specifically invited the Commissioner of the Queen.*[15] *We toured through the province and visited some significant sites. We had also invited the Provisional Council for the Protection of Nature*[16] *to show that we thought it was important to conserve the Drentsche Aa area. We did not have any specific plans to offer them yet at that time. But the trip was very successful. In particular, the Provisional Council for the Protection of Nature was very enthusiastic. They asked us to develop plans for nature conservation policy for the Drentsche Aa area.*
>
> State Forest Service official, interviewed on 8 November 2005 in Heino

At the end of the trip, the officials were very impressed by what they had seen in the Drentsche Aa area and by the story told by the State Forest Service representatives. They decided to ask the representatives to develop their ideas in the form of a plan with scientific and societal relevance. Edgar Stapelveld and Harry de Vroome were very pleased with this outcome. They could now start to put their thoughts on paper, although at that moment these ideas were not very concrete yet. They asked their colleague, Freek Modderkolk, to assist them and asked the RIVON[17] institute to provide a scientific basis for their plan. The RIVON institute had been established in 1955 as part of the State Forest Service, with the aim of underpinning governmental action with sound scientific or professional knowledge. Its main task was to advise the State Forest Service officials with regard to the management of their nature reserves. In addition to formulating advice, the RIVON

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14 Provincial Council (*Provinciale Staten*): Provincial parliament elected by the people.

15 Commissioner of the Queen (*Commisaris van de Koningin*): chairman of the Provincial Government and representative of the National Government in the province.

16 Provisional Council for the Protection of Nature (*Voorlopige Natuurbeschermingsraad*): an independent advisory committee on the protection of nature based in the Ministry of Agriculture, Nature and Fisheries (1946-1968).

17 RIVON (*Rijksinstituut voor Veldbiologisch Onderzoek ten behoeve van het Natuurbehoud*): the Botany Section of the Dutch national institute of field biological research (1955 - 1969).

scientists also had an important educational task: they were responsible for supervising new State Forest Service officials during their introduction training. One of the leading RIVON scientists who supervised many students during their introduction training was Chris van Leeuwen. Many State Forest Service officials in the Drentsche Aa, and also in other parts of the Netherlands, still fondly remember him.

Picture 4.2: Drentsche Aa valley at Loon. Picture taken by Edgar Stapelveld on 18 June 1962.

> *I can still remember the first time that I worked together with Chris van Leeuwen. We went to Terschelling. I met him at Utrecht station. It was a Monday morning. I had never seen him before but I immediately recognised him because of his ecologist backpack. Together we travelled to Harlingen. He was my mentor.*
>
> State Forest Service official, interviewed on 10 August 2005 in Assen

The representatives of the State Forest Service already knew the RIVON scientists from their practical period, so the RIVON scientists were already part of their network. Freek Modderkolk said:

> *Big events were planned during which the RIVON scientists came to visit the Drentsche Aa for a couple of days. We used to call this 'the RIVON circus'. Sometimes we would also ask someone personally to come over and help us out. We would ask Chris van Leeuwen, a plant sociologist, or Jan ten Hoeve, a hydrologist...*
>
> State Forest Service official, interviewed on 10 August 2005 in Assen

Apart from the RIVON research team, there were no other existing scientific claims to nature conservation expertise in the Drentsche Aa area. The State Forest Service representatives relied on the RIVON scientists' theories and concepts, and this gave the RIVON institute influence on the formulation of the plan. We can consider the RIVON scientists and the State Forest Service officials to be a cognitive community in which the RIVON scientists were the leaders and the State Forest Service officials the followers (see Figure 4.1). When the RIVON scientists were approached by the State Forest Service officials, their interest was immediately triggered. They were already familiar with some of the Drentsche Aa area from their former research in the mid 1950s.

During the formulation of the plan, Edgar Stapelveld and Harry de Vroome also invested in building a good relationship with the Province. They knew that they needed to involve policy makers in order for their plans to become successful. During an interview, Edgar Stapelveld told me:

> *We contacted the Province. Contacts between State Forest Service officials and policy makers hardly existed at that time. As we wanted to be involved in the planning of the area, we contacted the Commissioner of the Queen and the Elected Provincial Deputy.*[18] *In Drenthe we were obviously quite successful. At that time, I used to have a weekly appointment with the Elected Provincial Deputy and a monthly appointment with the Commissioner of the Queen.*
>
> State Forest Service official, interviewed on 8 November 2005 in Heino

Soon, the State Forest Service officials developed a close relationship with the Commissioner of the Queen and other provincial officials. They kept them up to date and informed them about the plans for the conservation of the Drentsche Aa area. The Commissioner of the Queen and the other provincial officials whom the State Forest Service officials had involved were enthusiastic about the plan and supported it.

In the summer of 1963, the final version of the nature conservation plan, called *Stroomdallandschap Drentsche Aa*[19] (State Forest Service, 1965) but usually referred to as the *Gedachtenplan*[20] was submitted to

18 Elected Provincial Deputy (*Gedeputeerde*): provincial government official. The Provincial Council can elect up to nine provincial deputies. The provincial deputies together with the Commissioner of the Queen form the Provincial Government.

19 *Stroomdallandschap Drentsche Aa*: Brook valley Landscape, the Drentsche Aa.

20 *Gedachtenplan*: Conceptual plan.

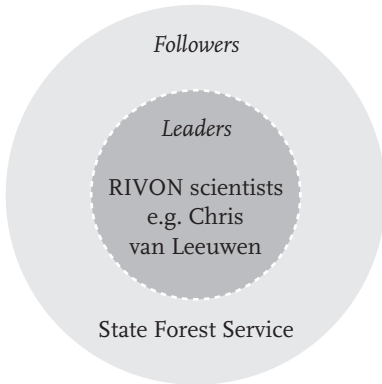

Figure 4.1: Gradient theory cognitive community.

the Ministry of Education, Art and Science [21]. Nature conservation came under this ministry because, at that time, the cultural element of conservation - which, in a broad sense, included aspects of the sciences, the arts, and recreation - was dominant politically.

The *Gedachtenplan* argued strongly for the establishment of a 2,100 ha reserve to protect the biodiversity-rich water meadows along the Drentsche Aa streams. The State Forest Service representatives used arguments and theory from the RIVON to legitimate the preservation of the Drentsche Aa area. *The Gedachtenplan* relied heavily on Chris van Leeuwen and his gradient theory:

> *In this water catchment area, different plant communities can be identified because of the transitions from the higher grounds to the lower grounds, the transitions from the brook banks to the water level. These transitions show differentiations in nutrient availability and wetness. In addition to this, the gradients tend to mutually influence each other.*
>
> State Forest Service, 1965, p. 12

Based on van Leeuwen's gradient theory, the *Gedachtenplan* argued that biodiversity values were directly related to variation in abiotic conditions. High variations in abiotic conditions were thought to lead to high biodiversity values. The *Gedachtenplan* also argued that the quality of nature in the Drentsche Aa area (in terms of biodiversity and the number of rare species) was the result of traditional agricultural practices:

21 Ministry of Education, Art and Science (*Ministerie van Onderwijs, Kunst en Wetenschappen; Min. of OKW*). Later this ministry was renamed as the Ministry of Culture, Recreation and Social Work.

The management of the landscape needs to focus on the conservation of differentiations, and with this it will focus on the conservation of biodiversity. For the reserve, we refer to the management practice of haymaking, grazing, cleaning of the waterways, coppice management, burning of the heath lands, etc. .... The use of herbicides is incompatible with the aims of nature conservation and should be prohibited in the entire area.

State Forest Service, 1965, p. 23

According to the *Gedachtenplan*, nature conservation in the Drentsche Aa area should - in a way - be a form of cultural history conservation. To conserve nature in the Drentsche Aa area, the most vulnerable meadows would have to be bought and managed according to traditional agricultural management.

The *Gedachtenplan* was more than just a scientific report. The representatives of the State Forest Service also strategically included a section on the potential recreational value of the area to emphasise the societal relevance of the protection of nature and landscape (see Picture 4.3). Stapelveld remembers:

Our boss - van der Kloet - said 'you need public support for nature conservation. Citizens are interested in recreation, so we have to provide it whether we like it or not'. He then introduced the idea of recreational zones. We thought this was fair and we took it up. That is one reason to include the part on recreation. The other reason was the fact that our plan had to be approved by the Ministry of Education, Art and Science in The Hague. We purposefully included the part on recreation, but we also formulated it in such a way as to keep it a bit vague. This gave us some room for manoeuvre.

State Forest Service official, interviewed on 8 November 2005 in Heino

The part on recreation served as an argument for societal relevance. The recreational zones were a very innovative idea and had never been tried before. It was strategically added to convince the ministry of the societal value of the plan and to keep the Nature Conservation Inspector at the central State Forest Service office in Utrecht on board.

Picture 4.3: Drentsche Aa recreation in the Zeegserduinen. Picture taken by Edgar Stapelveld in the summer of 1963.

Box 4.2 Prime minister visits the Drentsche Aa area

On 15 and 16 February 1966, Minister Vrolijk, Assistant Secretary of State Egas and other high ranking officials visited the Drentsche Aa area to see for themselves what the *Gedachtenplan* was all about. Prime Minister Cals was also one of the party. During this visit, Harry de Vroome acted as guide. All of a sudden Harry de Vroome lost sight of the prime minister who had accidently fallen into an illegally dug trap. Harry de Vroome went down on all fours and held out his hand to help the prime minister out of this awkward position. However, before helping him out, he could not resist asking the prime minister for a favour. He wanted to be able to tell the press that the Drentsche Aa area would become a National Park. Unfortunately for Harry de Vroome, this incident did not affect the course of history because it was not until the late 1990s that the Drentsche Aa area would be nominated a National Park

Elerie and Koopman, 1996

The ministry forwarded the *Gedachtenplan* to the Provisional Council for the Protection of Nature, asking for their advice. This was the usual procedure at that time. The Provisional Council for the Protection of

Nature advised the ministry to accept it. When the ministry's response was too long in coming, Stapelveld and de Vroome together with the Commissioner of the Queen, Gaarlandt, requested a meeting with the Assistant Secretary of State [22] of the Ministry of OKW in 1964. During this meeting, the Commissioner of the Queen declared that the Province of Drenthe supported the plan. The Assistant Secretary of State then decided that the ministry would buy the brook meadows for the benefit of the State. The State Forest Service - who already owned some small pieces of forests in the area - was charged with the management of the areas that needed to be purchased (State Forest Service, 1965).

The involvement of the RIVON institute and the Commissioner of the Queen had successfully enabled the State Forest Service representatives to get the Ministry of OKW to accept their proposal. The Provisional Council's advice convinced the ministry of the scientific value of the *Gedachtenplan*. The fact that the Commissioner of the Queen declared his support convinced the ministry that the plan was being supported by the Province.

4.2 Farmers' response: the Deiningen report

In 1966, the *Gedachtenplan* was officially presented to the media at a press conference at the Provincial Headquarters. The following day an article was published in the regional newspaper [23] in which the most important aspects of the *Gedachtenplan* were presented.

Farmers and the Farmers' Union *Drents Landbouwgenootschap* [24] immediately opposed the plan. The farmers were very upset that the policy-making process had formally bypassed the *boermarken* [25]. This is illustrated by the following quote:

> *The severe indignation and concern that was expressed after the publication of the report is largely due to the 'about us, without us, against us' politics.*
>
> Drents Landbouwgenootschap, 1967, p. 34

22 Assistant Secretary of State (*Staatssecretaris)*: political officer at the national level who together with the minister heads up each ministry.

23 *De Drentsche en Asser Courant*, 26 January 1966.

24 Farmers' Union: called *Drents Landbouwgenootschap* until 1982 and then merged with other provincial organisations in the north to form *NLTO* after 1982. It represents the interests of farmers in Drenthe.

25 *Boermarken*: traditional governance structures of the farmers for the management of the local common properties.

Furthermore, as it was the Province that officially presented the report, it was unclear to the farmers and farmers' representatives who had actually written the report: the State Forest Service or the Province? And if the report had been written by the State Forest Service, did the Province support it? Immediately after the presentation of the *Gedachtenplan*, the Farmers' Union requested a meeting with the State Forest Service and the Province of Drenthe.

Negotiations started between the State Forest Service and the farmers. The farmers feared that the *Gedachtenplan* would hinder the land re-adjudication procedures. These procedures were fully prepared and the farmers were afraid that they would now be severely delayed.

Meanwhile, the Province, together with the State Forest Service and the Rural Engineering Service, were preparing a separate partial Regional Plan to incorporate the *Gedachtenplan* into the Province's spatial planning policy. The spatial planning policy was the most important framework for designation and protection of areas at that time. It was the State Forest Service officials dream to have the Drentsche Aa area declared a National Park (see Box 4.2). Although the time was not yet right for National Park status, the farmers were furious when they heard about the incorporation of the *Gedachtenplan* into the Province's spatial planning policy, and they broke off all negotiations. They felt that they were not being taken seriously. On 4 September 1967, the Farmers' Union published a counter report called *Deiningen om de Drentsche Aa* (The Drentsche Aa in turmoil), in short *Deiningen*, which represented the farmers' answer to the *Gedachtenplan*.

Farmers argued that their interests had not sufficiently been taken into account by the nature conservationists in their *Gedachtenplan*.

> *The birds have been counted. The farmers, who have built their livelihoods on these soils for generations and whose livelihoods are now severely threatened, have not.*
>
> Drents Landbouwgenootschap, 1967, p. 31

The *Deiningen* report questioned whose interests were in fact served by the implementation of the *Gedachtenplan*. The *Deiningen* report also expressed the farmers' fear of being hemmed in by nature conservation and no longer being able to respond adequately to pressures from the market, in terms of crop choices, investment, new technologies, expansion, etc. Farmers argued that the *Gedachtenplan* would have serious negative consequences for their livelihood practices (see Picture

4.4). The report expressed concern that nature conservation would severely restrict the productivity and competitiveness of farming:

> *The farmers feel that economically viable agricultural exploitation will be impossible in future if - because of public interest? - the decision is taken not to adapt the Drentsche Aa area to modern agricultural demands and return or keep it in the state of cultural development that is being described in the Gedachtenplan. We then consider the Drentsche Aa area to be lost for agriculture.*
>
> Drents Landbouwgenootschap, 1967, p. 41

Picture 4.4: 'Once upon a time...' A caricature in the Deiningen report making fun of the Gedachtenplan and ridiculing it (Drents Landbouwgenootschap, 1967, p. 38).

The *Deiningen* report also expressed the farmers' fears of land expropriation by the Province to implement the plans with regard to nature conservation, especially if the *Gedachtenplan* were incorporated into the Province's spatial planning policy. To legitimise this fear, the report referred to a situation in the 1930s, when the State Forest Service acquired land in a neighbouring area by expropriating farmers who did not want to sell their land. The *Deiningen* report expressed the fear that this might happen to farmers in the Drentsche Aa as well:

> *Many of the older people will remember the 'enforced' voluntary sale of waste lands to the State Forest Service and other governmental-, and semi- governmental institutes....The director of the State Forest Service may have declared, 'I am certainly not going to expropriate agricultural land', but as the regional plans are*

already being adapted, perhaps this is not really the right moment for such declarations to be credible.

Drents Landbouwgenootschap, 1967, p. 28

The *Deiningen* report also questioned the scientific underpinning of the *Gedachtenplan*. The *Deiningen* report for example challenged the nature conservationists' claim that the Drentsche Aa area was very valuable for the conservation of certain bird species:

In the State Forest Service's Gedachtenplan, a great deal of attention is paid to meadow birds. They even managed to count them.... The inventories showed that there were 654 pairs of meadow birds present in the Drentsche Aa area. At first this seems a lot. However, when analysed in more detail, it is not as much as it seems. If we look at the number of birds in relation to the entire size of the water catchment area, we find a density of less than one pair of birds per five ha. This is a density which is surpassed in many, many areas in Drenthe. Therefore the extremely rich meadow bird population which the report suggests simply does not exist. In addition to this, the black-tailed godwit (Limosa limosa), the lapwing (Vanellus vanellus) and the common oystercatcher (Haematopus ostralegus) are not rare at all. They are common throughout the entire province of Drenthe.

Drents Landbouwgenootschap, 1967, p. 30

This shows that the farmers challenged the claim that the Drentsche Aa was important for meadow birds. In the *Deiningen* report, the farmers also (indirectly) challenged the nature conservationists' claims that their management would conserve the landscape. The *Deiningen* report includes photographs showing a vegetation mainly consisting of stinging nettles (*Urtica dioica*). The caption says 'a detailed picture of the new vegetation. Is this the proposed future?' (see Picture 4.5). In this picture, the farmers question the kind of vegetation that nature conservation management practices would lead to. They did not believe that the *Gedachtenplan* would lead to a conservation or even restoration of the old biodiversity-rich water meadows.

The nature conservationists mostly ignored these challenges. There were no direct responses in the media or in policy documents. During an interview on 10 August 2005 in Assen, Freek Modderkolk told me:

Those meadow birds were definitely threatened by the changing agricultural practices. If we had not protected them at that time,

we would have lost them. Furthermore, the Drentsche Aa was home to some very rare bird species such as the corncrake (Crex crex) and the black grouse (Tetrao tetrix).

The farmers' challenges to the scientific validity of the *Gedachtenplan* were not seen as a threat by the State Forest Service officials. They felt that the farmers just did not know what they were talking about: not only was the quantity of meadow birds important, but also the rarity of the species counted as a legitimate argument for their protection. The State Forest Service officials did not really take the scientific challenges by the farmers seriously and nothing changed because of them.

Picture 4.5: Picture in the Deiningen report with the caption 'a detailed picture of the new vegetation. Is this the proposed future?' Drents Landbouwgenootschap, 1967, p. 33

4.3 Land acquisition and management

After the publication of the *Deiningen* report, negotiations started between the State Forest Service officials and the farmers' representatives. Now that the nature conservationists had managed to get their plans approved, they started fighting the land re-adjudication procedures to save as much as possible of the Drentsche Aa area in its original state. When the Rural Engineering Service started preparing for the construction of a canal at Taarloo, they found that all of a sudden they could no

longer get permission for its construction due to the nature conservation plans. This canal would connect the Drentsche Aa river system to the *Noord-Willemskanaal* and allow faster drainage so as to reduce flooding and thereby serve intensification of agricultural production. The canal had already been planned as far back as the beginning of the 1960s. In 1964, a similar canal at Loon had been approved by the provincial government, so there was some confidence that the canal at Taarloo would be approved as well. However, as we have seen, in the intervening years the *Gedachtenplan* had been accepted and therefore the State Forest Service representatives had gained power. They started actively campaigning against the construction of the canal at Taarloo. In an interview on 14 June 2005 in Yde, Alex Ernst, who had been working with the State Forest Service in the Drentsche Aa in the late 1960s and early 1970s, told me:

> *You know the canal at Loon? Well, the Rural Engineering Service had also planned such a canal at Taarloo. We fought like mad against its construction and it worked! We were able to completely stop the construction of the canal at Taarloo.*

The provincial government decided that the canal at Taarloo would not serve the interests of the *Gedachtenplan* and that therefore it would not serve the interests of society. The Province rejected the plans for its construction. In an interview on 21 July 2005 in Middelburg, Walter ten Klooster, who was the Drentsche Aa State Forest Service ecologist from 1965 until the mid 1990s, told me:

> *In society, landscape has a higher status than nature. Nature is always seen as being inferior to landscape. It is easier for people to relate to landscape than to nature. That is just the situation and we had to deal with it. However, this means that you always have to fight harder to conserve nature than to conserve the landscape. People often blamed us of never making compromises, but in nature conservation compromises are often not an option.*

The nature conservationists tried to take as much advantage as possible of the legal options to oppose the land re-adjudication procedures. They wrote numerous petitions against the plans for the land re-adjudication and filed appeals with the Province of Drenthe. Sometimes they were successful and managed to prevent the construction of a canal or to acquire additional plots of land for nature conservation. The farmers resented this and responded by writing their own petitions. Soon the nature conservationists and the farmers became deadlocked. Land re-adjudication procedures came to a halt.

It was at this point that the Ministry of Culture, Recreation and Social Work in The Hague decided to intervene. At the time, this ministry was responsible for both regional land re-adjudication procedures and nature conservation (Van der Windt, 1983) and therefore had the authority to appoint a committee to advise - on scientific grounds - about how to proceed with regard to the Drentsche Aa. The committee appointed consisted of three experts, all eminent nature conservation scientists [26] (Wijchman, 1970). The farmers' organisations immediately questioned the composition of this new committee because they felt that the committee was biased as it included only nature conservation experts. [27] Despite the farmers' objections, the committee went to work. In January 1969 the committee concluded that the State Forest Service officials were right. The committee advised the ministry to stick to the original *Gedachtenplan*. Despite the farmers' misgivings, the ministry followed the committee's advice (Wijchman, 1970).

On foot of the committee's advice, an ad hoc meeting was organised between the State Forest Service, the Secretary of State and the provincial government on 5 March 1969 to decide on a strategy to communicate the decision to the farmers. It was decided that, in order to ease the farmers' minds, the meeting would first of all have to address the farmers' fear of land expropriation. It would have to confirm that no agricultural land would be expropriated. Furthermore, it was decided that the buying of agricultural land for nature conservation purposes would be incorporated in the land re-adjudication procedures.

On 15 April 1969, these decisions were communicated to the farmers and the farmers' organisations during a second meeting with high ranking provincial officials. [28] During this meeting, the parties decided to revitalise the land re-adjudication procedures so as to prevent further delays as much as possible. To open up negotiations between the farmers and the State Forest Service concerning the price for which the agricultural lands were to be purchased, an advisory committee was appointed. This advisory committee - the Foundation for

26 Prof. Waterbolk: director of the biological and archaeological laboratory of the University of Groningen. Prof. van de Kamer: professor of zoology at the university of Utrecht. Mr. Gorter: chairman of the Provisional Council for the Protection of Nature and secretary of the Dutch Society for the Preservation of Nature.

27 *Drentse en Asser Courant*, 10 January 1969.

28 The meeting was chaired by Commissioner of the Queen Gaarlandt, and several farmers' organisations participated, in addition to the State Forest Service, the provincial government, the Water Board, municipalities and several actors concerned with land re-adjudication.

the Administration of Agricultural Land - would act as a middle man, purchasing the land for the newly planned nature reserve and then selling it to the State Forest Service.

On 8 November 1969, the Foundation for the Administration of Agricultural Land and the State Forest Service came to an agreement with regard to the price of agricultural lands. The agricultural value of brook meadows was estimated at between 1,250 and 8,000 guilders per ha (between 570 and 3,636 euros). The exact value differed per case and was determined by the foundation. The agricultural lands would be purchased for at least 4,000 guilders per ha more than the going price. They would be purchased by the foundation at a price ranging from 5,250 to 12,000 guilders per ha (between 2,380 and 5,454 euros). These additional 4,000 guilders were a compensation for the fact that the agricultural lands would be withdrawn from future agricultural use (Ernst, 1976). The Ministry of Culture, Recreation and Social Work in The Hague agreed to make additional funds (10 million guilders, equivalent to 1 million per year over a ten-year period) available to enable the purchase of the ancient water meadows and hay lands in the broad glacial valley bottoms.

The collaboration between the State Forest Service and Foundation for the Administration of Agricultural Land accelerated the process of land acquisition. Before, the acquisition of agricultural land had been slow and cumbersome. Although officially the State Forest Service could legally start buying agricultural land immediately after the ministry had approved the *Gedachtenplan* in 1965, this proved difficult in practice. Only a few farmers were willing to sell their lands. The ministry had set a limit to the maximum price that the State Forest Service could offer the farmers. Prices were not allowed to exceed 6,000 guilders per ha (approximately 2,730 euros) which was the market value of these plots at that time. Furthermore, farmers' organisations advised their members *not* to sell their land to the State Forest Service (Ernst, 1976). During that period, it was really hard for the State Forest Service officials to buy land. Alex Ernst, who was working with the State Forest Service in the Drentsche Aa in the late 1960s and early 1970s, remembers:

> *We had an exact overview of all farmers in the area and the land that they owned. We knew exactly which farmer owned which piece of land. When I started working in the Drentsche Aa area in the late 1960s, I started by visiting a different farmer every day. With my Amsterdam mentality I thought I would come and*

conquer the Drentsche Aa. Well, it did not work that way. After six months I was begging my superiors to please assign a different area to me. I could not even get a single penny or a single hectare from these farmers. And well, the agricultural land that I wanted was of a very low quality so I could not offer them all that much for it either.

State Forest Service official, interviewed on 14 June 2005 in Yde

The hard-core farmers in the area resented the purchase of farmland for purposes of nature conservation and used social pressure to prevent others from selling. Those who sold out were considered as traitors to the farmers' cause. Between 1966 and 1969, only 320 ha of land were acquired by the State Forest Service.

The November 1969 agreement between the State Forest Service and the Foundation for the Administration of Agricultural Land (the additional funds) provided a new incentive - the 4,000 guilders of extra compensation on top of the market price - and the farmers became divided. The area in which the State Forest Service was interested - the brook meadows - was mostly of low agricultural value. Until then, there had never been a real market for these lands. In particular, farmers who owned just a few plots of brook meadows - far away from their farm but within the boundaries of the nature reserve - became interested in selling their land. They were now presented with a good opportunity to sell it for a price higher than the market value and higher than before. Other farmers who were interested in selling were older farmers without successors. Decisions could be made quickly due to the small number of people involved in the individual negotiations. It proved relatively easy for the State Forest Service to acquire the lands along the streams. The extra payments proved a real incentive. These also allowed the State Forest Service to buy good agricultural lands and exchange them for bad water meadows:

One of the first pieces of land that we exchanged was Hendrik Lanjouw's agricultural land. He cultivated approximately 12 ha as a tenant. I thought, 'if I can buy these 12 ha from the owner, I can easily exchange them for at least 24 ha of water meadows.' Hendrik's agricultural land was of good quality, whereas the water meadows were of bad quality. A lot of farmers knew this and thought, 'Wow, that is a good deal. If we can exchange our bad agricultural plots for good ones - even if we get less land in return - this will greatly reduce risks [of farming].' This was one of the things that got the acquisition of land moving.

State Forest Service official, interviewed on 14 June 2005 in Yde

As from 1969, the State Forest Service was able to buy between 120 and 150 ha per year (Ernst, 1976). By 1974, the State Forest Service already owned around 1,000 ha.
As the State Forest Service continued to buy additional agricultural plots, it ran into the problem of how to manage the plots:

> *Harry de Vroome wanted to have as much of the Drentsche Aa area as he could possibly get. However, he could not oversee the consequences. I was always a bit afraid of owning that much land. It is nice to have it, but it also needs to be managed. In the Drentsche Aa, this management was a real challenge.*
>
> State Forest Service official, interviewed on 21 July 2005 in Middelburg

According to the gradient theory, the nature conservationists had to continue the traditional agricultural management in order to conserve or re-develop the traditional biodiversity-rich vegetation. However, they lacked the knowledge of how to do this. They were aware that the farmers did have the knowledge of the traditional management of the water meadows:

> *Whenever I bought a plot of land from a farmer, I always asked him how he had managed his land. I wrote everything down meticulously. We just did not know.*
>
> State Forest Service official, interviewed on 14 June 2005 in Yde

The State Forest Service officials learned that, over many centuries, the farmers in the area had evolved a unique farming system that was well adapted to the extreme poverty of the soils (see Box 4.3).

Box 4.3: The traditional farming system

The traditional farming system consisted of several distinct elements. One element was the heather fields. After the removal of the original tree cover, heather species (*Calluna, Erica*) colonised the plateaus. Farmers grazed large flocks of sheep on these common moorlands. During the night, the sheep were kept in a deep litter fold (*potstal*) that allowed accumulation of their manure. To add to this litter, farmers regularly cut the topsoil (*plaggen*) on the moorland and mixed it in with the manure. A very large area of moorland was thus 'mined' by the sheep and by turf cutting in order to maintain the fertility of a relatively small arable area. In some places, this led to permanent drift sand areas. As a result of these practices, 18th century visitors described the area as bleak and desolate, with not a tree to be seen over vast distances. A second element

in the traditional farming system was the relatively small arable fields or *essen* near the villages, on which the litter from the sheepfolds was used. Over the centuries, these practices raised the surface of these areas, so that they clearly stand out today. The water meadows formed a third and indispensable element in the farming system. These wet meadows were mainly used for haymaking in summer. The cattle kept by local farmers had evolved into a special breed, the Drentsche Cow, which could survive the lack of minerals in the diet derived from these poor soils. It became extinct in the 1930s because it held no promise for use in modern agriculture. A fourth element in the system was small scattered fields and meadows on the slopes of the plateaus on which buckwheat and rye were produced, and on which cattle grazed. These small elements were important as habitats for the black grouse (Tetrao tetrix) that some older locals still fondly remember as a game bird but that has long since become extinct in the area (Van Bommel and Röling, 2004).

Another special feature of the old farming system was the use of irrigation with seepage water. The water meadows were fed by seepage of water that had percolated underground through layers that varied in terms of mineral content. Farmers discovered that irrigation with seepage water had two advantages: (1) it was relatively warm and could keep meadows frost free, allowing a cut of grass at least a month earlier than normal, (2) on peat soils, the chalk-rich water accelerated peat mineralisation, leading to fertile soils and high yields for as long as the peat layer lasted. Records were found which show that such irrigated fields had a very high monetary value. In the landscape, many instances can be found were the brooks have been relocated to the higher edges of the valleys to allow this type of irrigation, e.g., the *Anreeperdiepje* where evidence was found of such a cunning 18th century irrigation system. Also, dikes were constructed to prevent acid run-off from the plateaus from entering the valuable irrigated meadows (Gert Jan Baaijens, interviewed on 9 August 2005 in Dwingeloo).

A number of important changes affected the traditional farming system. The introduction of fertiliser removed the need for sheep altogether, and the flocks were sold off. In 1886, the age-old commons (*boermarken*) were dissolved into privately held lands. The vast quantities of cheap barbed wire that became available after the First World War allowed farmers to fence off their land, thus reducing the need to maintain the traditional wooded banks as fencing. The centuries-old landscape was transformed in a very short time

Van Bommel and Röling, 2004

In the past, the water meadows would be hand-mowed by scythe. The grass would be dried and fed to the cattle as hay during the winter. In the 1960s and 1970s, the practice of hand-mowing by scythe was already prohibitively expensive. Hence the State Forest Service commissioned the development of enormous tracked mowing machines that could move about on the soppy land. Elerie and Koopman (1996) recount the story of the first field trial with the new mowing machines. A lot of money had been invested in their development and therefore the first trial had to be a success. During this trial, the mowing machine was driven by the State Forest Service director. He disappeared from view and his employees waited anxiously for him to reappear. He was missing for so long that they became afraid that something had gone wrong. To their relief, the machine did what it was designed to do and was bought by the director.

At that point, the State Forest Service decided to offer some farmers employment as State Forest Service nature conservationists:

> *We needed farmers who knew the area. Especially with regard to the traditional management.*
>
> State Forest Service official, interviewed on 10 August 2005 in Assen

Such an alternative job was very welcome to farmers who had not kept up with modern developments in agriculture. The first farmer to become a nature conservationist was Hendrik Lanjouw:

> *I was raised on a small farm in the Drentsche Aa area. Unfortunately, my father died of a heart attack at a relatively young age. I had wanted to study forestry, but I had to keep the farm going. I have always had a love of nature but I had never been able to really express it. After a while I got tired of my one-man farm. I never had a single day off. I was still single and I had nothing to lose. That is why I applied for a job with the State Forest Service. They bought my farm and I became the first employee of the Drentsche Aa nature reserve.*
>
> State Forest Service official, interviewed on 13 January 2005 in Anloo
>
> *Lanjouw was the first one. He applied for a job with us. He presented himself as being someone who knew where to find the sites with rare plants. When we received his letter, he had included a home-made map featuring true cowslip (Primula veris), twinflower (Linnaea borealis), etc. My boss gave me this letter and asked me to go and talk to this guy. That is how we got to know him.*
>
> State Forest Service official, interviewed on 10 August 2005 in Assen

Another way in which the State Forest Service involved farmers in the management of the newly acquired water meadows was by means of management contracts and tenancy contracts with farmers who sold their land.

> *Once a farmer asked us if he could continue to manage his land after selling it to us. We then thought, 'maybe we can offer him a tenancy contract.' We told him, 'We are willing to buy your land and give you a tenancy contract, but this will reduce the price of your land'. We mainly did this for practical reasons. As we acquired more land, the cost of managing the land also increased. We just could not manage all our land ourselves with our own employees and their machines. So we asked farmers if they would be interested in tenancy contracts: they could manage the land on our conditions. A lot of these agricultural lands were later exchanged or sold again, but at least we were able to buy them for a very reasonable price.*
>
> State Forest Service official, interviewed on 14 June 2005 in Yde

Nature conservationists thus started co-operating with farmers in the implementation of their nature conservation policy. In the late 1960s, this was a very innovative idea which had never been tried before. It allowed the State Forest Service to manage all the land that they acquired for the Drentsche Aa reserve. They used traditional farming knowledge to manage the most vulnerable parts themselves, and they involved farmers in the management of the less vulnerable parts by means of tenancy contracts.

From this point onwards, the nature conservationists and the farmers seemed to have come to a truce. But the apparent peace was misleading. Beneath the surface, the conflict continued to simmer. Tensions remained and, although divergent views were not always expressed openly, they continued to inspire mutually antagonistic feelings between nature conservationists and farmers. This hidden conflict remained unacknowledged in the 1980s and early 1990s. The conflict would resurface again in the late 1990s, but that is something that we will come back to in Chapter 6.

4.4 Analysis

Let us now turn to the conceptualisation of this story in terms of governance and the nature of expertise.

4.4.1 Governance

With regard to governance, we stated that we wanted to study the involvement of the type and number of actors in the policy process in order to get an idea of the kind of governance process with which we were dealing. In the Drentsche Aa area in the 1960s and 1970s, we can observe that in the formulation of the *Gedachtenplan* and the decision making associated with it, the State Forest Service, the RIVON scientists, the Ministry of OKW and the Provisional Council for the Protection of Nature played an important role. The formulation and decision-making process excluded farmers even though the farmers would have wanted to have been included in the policy process. The *Gedachtenplan* was developed at provincial level by the State Forest Service and then submitted to the Ministry of OKW. Decision-making power rested with the ministry which decided to approve the plans. As the formulation process involved only traditional policy actors, such as policy makers and scientific experts, we can interpret this as a form of hierarchical governance. After formulation, the implementation of the *Gedachtenplan* became less hierarchical. It took the form of negotiations between nature conservationists and farmers. Both played an active and direct role in the negotiations concerning the price of the land. The state was still present in that it made additional funds available for the land to be purchased by the State Forest Service.

Even as far back as the 1960s there was concern about public support. The central State Forest Service department in Utrecht insisted that the *Gedachtenplan* took account of the need for public support and included a plan for recreational zones. The ministry also was concerned about public support for the plan. It wanted to make sure of the support of several actors. For example, it would not accept the plan until it was sure that it was supported by the Province. The way in which the concern about public support was addressed reflects the predominantly hierarchical governance context: interests of tourists were put on the agenda by traditional policy actors, with no involvement of tourists themselves or their representatives. Interests of citizens were believed to be protected by elected political representatives. The concern about public support, however, points towards a more multi-actor governance mode of steering.

In summary, the governance context can be interpreted as a hierarchical governance context with multi-actor influences. The policy process resulted in a successful formulation and implementation of a nature policy plan for the Drentsche Aa area. In a different social and cultural setting, the outcome of the policy process might have been completely

different. What if the State Forest Service officials had not been good salesmen or persuaders with powerful negotiation skills? What if they had not been friends with the Commissioner of the Queen? What if the ministry had not made additional funds available for the purchase of agricultural land? Then things might have turned out in a completely different way.

4.4.2 Experts and expertise

Let us now turn to the nature and role of experts and expertise in this setting. With regard to the nature and role of experts and expertise, we stated that we wanted to study the number and type of cognitive communities, their boundary work strategies and their demarcation criteria. In the 1960s and early 1970s, the State Forest Service experts together with the RIVON monopolised expertise. When the State Forest Service officials were in need of scientific backup, they turned to the RIVON scientists (also because the RIVON scientists were already part of their network). Together, the RIVON scientists and the State Forest Service officials formed a cognitive community. In this cognitive community, the RIVON scientists were considered the leaders (the inner circle) and the State Forest Service officials were considered to be the followers of the RIVON scientists (the outer circle). This resulted in a layered system of expertise in which the RIVON scientists developed the theories on nature conservation in the Drentsche Aa area and in which the State Forest Service officials used these theories to legitimise nature policy by referring to work done by the scientific core of the nature conservationists' community. Although there were competing claims, the RIVON scientists and the State Forest Service officials were able to maintain their monopoly. When the farmers tried, in their *Deiningen* report, to challenge the claims to nature conservation expertise as formulated in the *Gedachtenplan*, their challenges were ignored. Apparently, the farmers' challenge was not credible enough and therefore not threatening enough to trigger reaction, as it was not theoretical and objective.

When the State Forest Service experts needed traditional farmers' knowledge for the management of their acquired water meadows, they claimed it as their own. The implementation of the *Gedachtenplan* required the State Forest Service officials to manage the newly acquired water meadows according to traditional farming systems. The State Forest Service officials did not have this knowledge themselves so they had to engage the farmers. When buying land, State Forest Service officials asked farmers how they had traditionally managed the agricultural plots. They also gave farmers jobs as nature conser-

vationists. When the farmers became nature conservationists, their knowledge became expertise on nature management. That is how the boundary defining the nature conservationists' knowledge was expanded to include the traditional farmers' knowledge. This shows not only the dynamic character of experts and expertise but also the monopolisation of claims to expertise on the part of the gradient theory cognitive community. Traditional farmers' knowledge was incorporated as knowledge for nature management. Nature conservationists were seen as experts and therefore they were trusted to find the right solution. This included the power to determine how the farmers and their traditional knowledge would fit into this solution. Their monopoly allowed nature conservationists to strategically use traditional farmers' expertise as implementation knowledge for nature management.

The nature conservationists were able to succeed because at that time scientific knowledge was seen as an important problem-solving mechanism and therefore as an important legitimisation of the policy process. Although the Ministry of OKW took the final decision on the basis of the advice of the Province and the Provisional Council for the Protection of Nature, the *Gedachtenplan* was formulated at the provincial level by nature conservationists. In the *Gedachtenplan*, the State Forest Service officials involved RIVON scientists to provide the plan with a scientific underpinning in the form of the gradient theory. This allowed them to engage in ideological self-description in which they could claim theoretical grounding of their ideas. In addition, the Provisional Council for the Protection of Nature was involved in the decision-making procedure. This was the usual procedure at that time as its scientific expertise legitimised decisions made by the ministry. Indeed, we have seen that it played a key role in legitimising the decisions of the ministry. Experts were asked by policy makers to give scientific and technical advice on matters on which they were considered to be knowledgeable.

4.5 Conclusion

What emerges here is a story of how a few dedicated nature conservationists managed to conserve and protect nature in face of strong economic counter forces. So what happened?

By involving the ministry, the State Forest Service officials were able to gain leverage for their ideas. The problem of protecting biodiversity in the Drentsche Aa was approached as a straightforward, uncomplicated

situation, as if there was consensus on the goal (the protection of biodiversity) as well as on the knowledge required to reach this goal (the gradient theory). Although tourism interests were included, farmers' economic interests were not taken into account. This predominantly top-down regulation and decision making in which rules and decisions are made by policy makers can be interpreted as a form of hierarchical governance with some multi-actor influences.

All in all, we can conclude that, in this predominantly hierarchical context, scientific knowledge was seen as an important problem-solving mechanism. The knowledge production process involved the gradient theory cognitive community. This cognitive community had monopolised the claim to nature conservation expertise (the gradient theory). As they did not have to engage in boundary work with other cognitive communities, they alone were able to determine how nature conservation expertise was framed and thus how the problem could be solved. Boundary work involved mainly ideological self-description. Demarcation criteria used included science being theoretical and objective. We can conclude that the nature and role of experts and expertise took the form of speaking truth to power.

5

Contested management of the Drentsche Aa reserve (1970-2007)

Der wetenschap staat nietmaals stil, ... (Professor Prlwytzkofski)
Toonder, 1994 [29]

5.1 Competing ecological theories

The story of the Drentsche Aa area continues in the beginning of the 1970s when a professor from the University took his biology students on a field trip to the Drentsche Aa area.

When the professor set off with his students, the aim of the trip was to carry out plant inventories in the Drentsche Aa area. He was delighted to have found such a beautiful, biodiversity-rich area so close to his University. At some spots the students found more than 100 plant species per square metre. The professor could not believe his eyes. He became very enthusiastic and wanted to carry out more research. After the trip, he contacted the regional State Forest Service official who was responsible for these matters. This official immediately saw the potential advantages of such cooperation for the State Forest Service. He hoped that the University scientists' research might give the service more insight into the ecology of the Drentsche Aa area and inform management. The State Forest Service offered the professor the second floor of its office building in Oudemolen, in the

29 *Science never stands still, ... (*Professor Prlwytzkofski) - (Toonder, 1994)

middle of the Drentsche Aa area, to use as a field laboratory.
The regional State Forest Service officials and the University scientists got along very well and this resulted in fruitful cooperation. The professor supported the work of Chris van Leeuwen.[30] The leading regional Drentsche Aa State Forest Service ecologist was also a fan of Chris van Leeuwen. During his practical period, Chris van Leeuwen had been his mentor.

> *Van Leeuwen was the Dutch expert with regard to ecology. The gradient theory was one of several theories that he developed. Everybody loved him and his ideas. However, not many people really understood him. I have learned to understand him. Nevertheless, when he spoke, everybody paid attention because his ideas were very credible. If Chris came to talk about something, everybody was there....I belonged to his group of fans who literally collected everything which could be found written by Chris van Leeuwen.*
> *I have had a lot of discussions with him.*
>
> State Forest Service official, interviewed on 21 July 2005 in Middelburg

At the regional level of the Drentsche Aa, he was the State Forest Service expert with regard to the gradient theory. He could apply and explain it.

The gradient theory argued that the biodiversity values were directly related to the variation in abiotic conditions. A great variation in abiotic conditions (gradients) was argued to lead to high biodiversity. These gradients included the contact zone between dry and wet areas, nutrient-poor and nutrient-rich areas, slope sites where basic top soils contacted more acid top soils, but these gradients could also be the result of human influence such as mowing or grazing regimes. Therefore the gradient theory argued that the quality of nature (in terms of biodiversity and the number of rare species) was closely linked to traditional agricultural practices. It stated that the traditional agricultural practices enriched nature as in these practices the naturally occurring gradients are taken into account. Therefore it argued that biodiversity values could be conserved by continuing traditional agricultural management in an unaltered way.

Because of the fruitful cooperation between the regional Drentsche Aa State Forest Service and the University, numerous biology students remember the field trips to the Drentsche Aa area in the 1970s, and many of them also carried out the fieldwork for their MSc theses in

30 In 1974, Chris van Leeuwen received an honorary doctorate from Groningen University, with Professor Dingeman Bakker as his promoter.

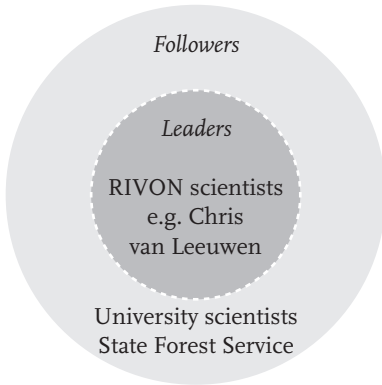

Figure 5.1: Gradient theory cognitive community.

that area. Part of the success of cooperation can be understood because the State Forest Service officials and the University scientists shared an interest in gradient theory and an understanding about what 'good' nature conservation practices entailed (see Figure 5.1).

Unfortunately, this successful cooperation did not last long. Soon, the University scientists and the regional State Forest Service officials started to grow apart. In the late 1970s, the first frictions started to come to light when research from the University showed that, despite acquisition and management by the State Forest Service, the water meadows of the Drentsche Aa were still degrading. This provided them with a puzzle because, on the basis of gradient theory, this should not have been possible. They started looking for an alternative explanation which would allow them to understand what was happening in the Drentsche Aa reserve. They tried to understand how the landscape was functioning, with what kinds of zones and with what kinds of plant communities. They took the gradient theory as a starting point and then went beyond it. They distinguished between different phases in the development of the vegetation. For them, the first phase was a situation in which man had little or no influence on the vegetation. According to the University scientists, the Drentsche Aa brook valley was then largely a peat area. Then men came in and started moderately influencing the vegetation by means of moderate drainage. During this phase, the biodiversity-rich water meadows developed. According to the University scientists, this phase continued until the beginning of the 20th century. In the 20th century - the modern phase - the whole area was drained and the system became an unnatural one. They started to focus their research specifically on these processes and encouraged their students to study them in their MSc theses. This re-

sulted in a large number of research reports on the Drentsche Aa area by the University. They showed that local factors such as acidity, water level and differences in eutrophy, as well as landscape factors such as groundwater flows, also determined vegetation types.

The frictions between the University scientists and the regional Drentsche Aa State Forest Service officials turned into a real conflict when a PhD student defended his PhD thesis at the University in 1983. He had been asked to analyse the logic behind ecological theories and took Chris van Leeuwen's gradient theory as a case study. He concluded that gradient theory lacked logic (as did most ecological theories at that time in his opinion). He concluded that gradient theory consists of a number of statements which are not always consistent with each other. He also concluded that many statements in gradient theory are not testable and that it is impossible to design research that could falsify whether the statements are correct or not (see Sloep, 1983).

The State Forest Service officials were very interested in this PhD thesis but, while reading it, they became furious:

> *It's outrageous that he [the PhD student] never even made the effort to understand Chris van Leeuwen. He interviewed Chris van Leeuwen only once. If you don't understand his theories, then go and talk to Chris! But don't pretend that you understand what he is saying while you don't understand a thing about it. I have got the dissertation, but I don't think I would advise you to read it.*
>
> State Forest Service official, interviewed on 21 July 2005 in Middelburg

At this point, the dispute was recognised by the actors themselves as a clash between different schools of thought. The regional Drentsche Aa State Forest Service officials belonged to the cognitive community that continued to follow the gradient theory. The University scientists had moved beyond the gradient theory and had developed their own position and thoughts with regard to the ecology and management of the Drentsche Aa region (see Figure 5.2).

Reflecting on the situation, a scientist from the University, told us:

> *This also led to the fact that a schools-of-thought battle emerged between us and the regional Drentsche Aa State Forest Service officials. It was really a fight. We had developed a vision on how things worked in the Drentsche Aa region. The regional State Forest Service officials stayed with Van Leeuwen. At certain points*

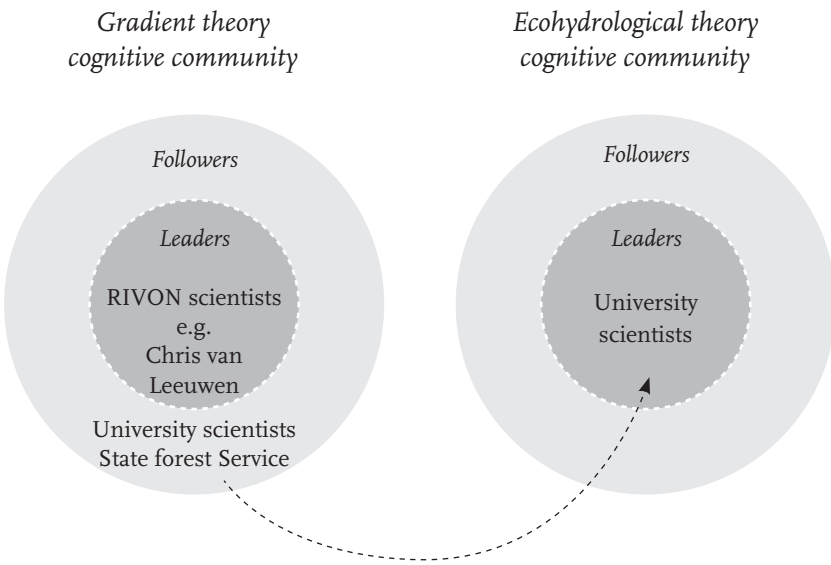

Figure 5.2: University scientists move beyond gradient theory and establish their own cognitive community.

> *this led to serious conflicts and this was difficult. It has to do with the fact that people defend certain positions on the basis of their concepts.*
>
> University scientist, interviewed on 27 February 2006 in Haren

The University scientists wondered why the regional State Forest Service officials were so reluctant to accept - what they saw as being - new scientific insights.

> *The Drentsche Aa State Forest Service officials were just not open to new research results and new scientific insights....For them, no further scientific work had to be done and the truth had already been found. Chris van Leeuwen's theories were all they needed.*
>
> University scientist, interviewed on 27 February 2006 in Haren

They perceived the regional State Forest Service officials as being afraid to move forward and they did not understand this. The further the University scientists moved beyond the gradient theory, the more the difference became clear between the University scientists and the regional State Forest Service officials, and this led to frictions. The regional State Forest Service officials continued to adhere to the gradient theory and did not feel that the University scientists' new insights added anything important:

Every time a student report was finished, it was sent to us. My boss would ask me to take a look at it in order to find out what the practical implication would be for us. Well, nine out of ten times I would have to tell him that the report was not useful to us. Most of the results were already known and a lot of stuff was incorrect. Experiments were carried out on small experimental plots and the results would then be extrapolated. Reality does not work that way. I am being a bit blunt here, but still...

State Forest Service official, interviewed on 21 July 2005 in Middelburg

According to the State Forest Service officials, the research carried out by the University scientists was not useful because it did not pay enough attention to the diversity of empirical reality. They claimed that, with Chris van Leeuwen's advice, they had learned to distinguish between the important issues that needed attention and the unimportant issues in practice. According to the State Forest Service, the universities lacked this experience:

A lot of people from the University wanted to think along with us but this did not really help us. They did not have Chris van Leeuwen's holistic view. Chris van Leeuwen was much better at understanding the big picture. He could tell us which things were important and which things were not. That way, we learned to distinguish between matters of primary importance and matters of secondary importance. For the scientists of the University everything was of primary importance and needed to be researched.

State Forest Service official, interviewed on 21 July 2005 in Middelburg

The boundary conflict also had some very practical consequences. Because of the different theories and concepts that they followed, the two cognitive communities had different ideas about the everyday management of the Drentsche Aa region.

5.2 Contested management

In the beginning of the 1980s, the Drentsche Aa area was increasingly experiencing hydrological problems. In 1985, two national State Forest Service experts were asked by the regional State Forest Service officials to look into these problems. They were a University trained hydrologist and a University trained plant ecologist, both of whom had recently been employed by the national State Forest Service (see Figure 5.3). In the 1960s, the State Forest Service would probably

have asked the RIVON institute for advice on these kinds of matters, but in 1969 the RIVON institute had merged with the ITBON [31] to become the RIN. [32] This transition had changed the character of the institute. The new policy of the RIN institute was professionalisation, and the RIN had become more focused on doing research than on giving advice to professionals in the field. During the RIN period, the contacts between the regional State Forest Service and the RIN researchers were on a more individual and personal level. Regional State Forest Service officials still asked RIN researchers for advice, but these contacts were more on an ad hoc basis. In addition to this, important RIVON researchers left the RIN during the 1970s. Chris van Leeuwen, for example, left the RIN in 1979 because he was offered a job at the University in Delft. As a result, the regional State Forest Service officials started to loose touch with the RIN institute. As the RIN moved to the background, the State Forest Service started to directly hire their own - often university trained - ecologists and hydrologists.

So in the second part of the 1980s, the new University trained ecologist and hydrologist became involved in the hydrological problems in the Drentsche Aa. They tried to understand the link between certain vegetation types (local and ecosystem level) and the groundwater flows (landscape level processes). Furthermore, they also carefully studied the conditions that needed to be met in order for a certain vegetation to develop. Taking all this into account, they concluded that the Drentsche Aa area was suffering from desiccation. According to them, this was caused not only by extraction of groundwater by drinking water companies and the canal at Loon which had been constructed as part of the land re-adjudication procedures, but also by the nature management practices of the regional State Forest Service. In order to manage the wet water meadows, the State Forest Service had created an extensive system of gullies. According to the ecologist and the hydrologist these gullies were too deep and thereby contributed to desiccation.

After the publication of the PhD dissertation on the gradient theory, the State Forest Service officials had developed an antipathy against all University trained researchers. They could not identify with them:

> *If we had a problem in the past, e.g., with water management, we could contact the RIN. At a certain point this was not possible any-*

31 ITBON: *Instituut voor Toegepast Biologisch Onderzoek in de natuur*: Institute for Applied Biological Research in Nature.

32 RIN: *Rijksinstituut voor Natuurbeheer*: National Institute for Nature Conservation (1969 - 1991).

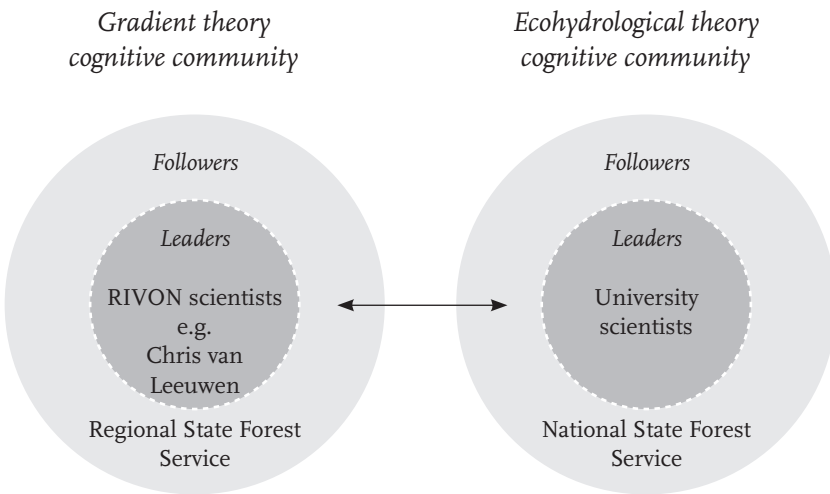

Figure 5.3: During the time of the RIN institute, the regional State Forest Service officials lost touch with the inner circle of their cognitive community. The role of the RIN leaders was taken over by national State Forest Service experts belonging to the outer circle of the ecohydrological theory cognitive community.

> *more. The State Forest Service got its own hydrologist. But if this hydrologist needed backup, he would directly contact the scientists from the University. This means that a whole circuit emerged - bypassing the direct managers - on which we did not have grip.*
>
> State Forest Service official, interviewed on 21 July 2005 in Middelburg

The State Forrest Service officials were indignant about the conclusion that desiccation was partly due to their own management practices. The gradient theory assumed that vegetation would adapt to all changes. Even if there had already been interferences, nature would deal with these changes itself. Therefore, there was no reason to close the ditches. According to the State Forrest Service officials, the University researchers simply did not understand gradient theory.
The ecologist and the hydrologist then asked the University scientists for backup. Two PhD students and their supervisor came to their aid and started to investigate the relationship between desiccation and the depth of the gullies. The point of departure for the PhD students was that, if the circumstances were right, in certain parts of the brook valley peat could be formed. Peat-moss vegetation was highly dependent on carbon dioxide-rich groundwater. The PhD students knew how to recognise the field conditions under which peat-moss vegetation could potentially develop. If there was no desiccation, the peat-moss

vegetation would still have to be present in the area. If there was desiccation, the peat-moss vegetation would have been replaced by other vegetation types. When they went into the Drentsche Aa area, near deep ditches (around 80 cm) they found other vegetation types. Along gullies (at most 20-25 cm), on a small scale, they also found localised spots with peat-moss vegetation. Their research supported the findings of the ecologist and the hydrologist, and they concluded that the deep ditches were indeed causing desiccation (Everts and De Vries, 1986a and b). According to the PhD students, the very rare peat ecosystem could be re-developed with relative ease in the lowest areas of the Drentsche Aa region by closing the deep ditches in order to create groundwater 'wells'. They sent their reports to the State Forest Service together with the detailed vegetation maps that they had used and created. These maps showed: 1) the spots in the Drentsche Aa area which had the potential to develop into the very rare peat ecosystem and 2) spots where the rare peat ecosystem vegetation type was still present.
If the State Forrest Service officials had been indignant about the conclusions of the ecologist and the hydrologist, they were furious about the conclusions of the PhD students. They went into the area themselves, with their own maps, to check the conclusions of the PhD students. By using different maps (different level of detail with regard to the vegetation types), they came to different conclusions. According to the State Forrest Service officials there was no desiccation at all. They accused the PhD students and their supervisor of drawing the wrong conclusions.

> *The gradient theory is a holistic theory that teaches that in nature conservation the abiotic conditions are the ones that determine which plants and animals will be able to survive in the area. Beiering's law states: 'everything is everywhere, but the environment selects.' You do not have to know the ecology of all these species in order to conserve nature. You have to focus on the abiotic environment. The University researchers take a more reductionist view by focusing on the species and their ecology.*
>
> State Forest Service official, interviewed on 21 July 2005 in Middelburg

According to the gradient theory, the vegetation would adapt to all changes. By intervening, people would destroy more than they would fix, so the original situation would have to be preserved as much as possible. Even when there had already been interferences, a nature conservationist would have to let nature deal with it itself. According to Van Leeuwen, the oligotrophic system should be disturbed as little as possible. Nature conservationists should keep their hand off. Therefore, there was no reason to close the ditches. This would only disturb the status quo.

The University scientists framed the State Forest Service officials' reluctance to accept the new findings as an attitude that was inspired not so much by scientific considerations as by social and political ones.

> *They just did not have the right machines to manage the water meadows. They used the agricultural machines that were also used by farmers, and these were not adapted to the wet situations of the nature reserve. So they just denied the problem of desiccation. It took me a long time to realise that this was the reason they did not want to raise the level of the groundwater table.*
>
> University scientist, interviewed on 27 February 2006 in Haren

According to the University scientists, for a long time, the Drentsche Aa State Forest Service officials were reluctant to even consider the possible negative effects of the deep ditches because they needed the ditches to keep their plots dry enough to manage them. If not, their machines would get stuck. Therefore they simply denied the possible problems that the ditches might have been causing.

The dispute was now about who actually knew what the best management was for the area. There was a strong us-versus-them feeling between the University scientists ecohydrological community and the regional State Forest Service gradient theory cognitive community. As the conflict escalated, mutual trust was completely destroyed. The regional State Forest Service officials strongly resisted and opposed the work of the University researchers.

> *If the University scientists wanted to carry out research in the Drentsche Aa area, they needed to ask us. We were very smart. We would give them bad plots to experiment on. Of course we were required to open up our area to researchers. It was one of our official assignments. But we did not want to sacrifice our best plots to a group of researchers that we did not trust. However, if someone from the RIN had come, they would immediately have been given our best plots.*
>
> State Forest Service official, interviewed on 21 July 2005 in Middelburg

As the conflict escalated, the State Forest Service officials reverted to stronger kinds of resistance, such as different kinds of political games.

> *At a certain point, my supervisor's permits were withdrawn. He was no longer allowed to enter the Drentsche Aa area with students.*
>
> PhD student, interviewed on 20 October 2005 in Groningen

At the beginning of the 1990s, the situation became untenable for the University scientists, and they decided to move out of the Drentsche Aa area. They continued their research on the management of biodiversity-rich brook meadows in Eastern Germany and Poland.

5.3 Settling the conflict

When the University scientists left the Drentsche Aa area, the ecologist and the hydrologist were on their own and they had to do something. The State Forest Service officials just kept ignoring their findings on desiccation. Nature management in the Drentsche Aa area continued on the basis of business as usual.

> *The regional State Forest Service officials did not find it necessary to take any measures. According to them, nature would take care of itself. We had everything and everyone against us.*
>
> Hydrologist, interviewed on 27 February 2006 in Wageningen

When the ecologist and the hydrologist felt that they would never be able to convince the State Forest Service officials, they changed their tactics. They stopped trying to convince them and tried instead to convince the regional director of the Drenthe State Forest Service. After a lot of discussion, the director became convinced of the University researchers' findings. The director was among the first State Forest Service officials in the Drentsche Aa area to believe the results of the hydrological research and took the side of the ecologist and the hydrologist (see Figure 5.4).

The director was a very powerful ally and gave the ecologist and the hydrologist an important advantage. He decided to appoint an advisory committee, chaired by himself, to decide upon the consequences that the conclusions on desiccation would have for the management of the Drentsche Aa area. A negotiation process of several years started during which the ecologist and the hydrologist tried to convince the other members of the advisory committee of their views. From time to time, researchers from the University were consulted. The now graduated PhD students, in particular, again carried out some additional research for the advisory committee (see Everts and De Vries, 1990). After a lot of pulling and pushing, the committee came to the decision to close the deep ditches. This decision was a major defeat for the State Forest Service official who was now rapidly losing influence. The power struggle now shifted in favour of the ecologist and the hydrologist whose views rapidly gained authority.

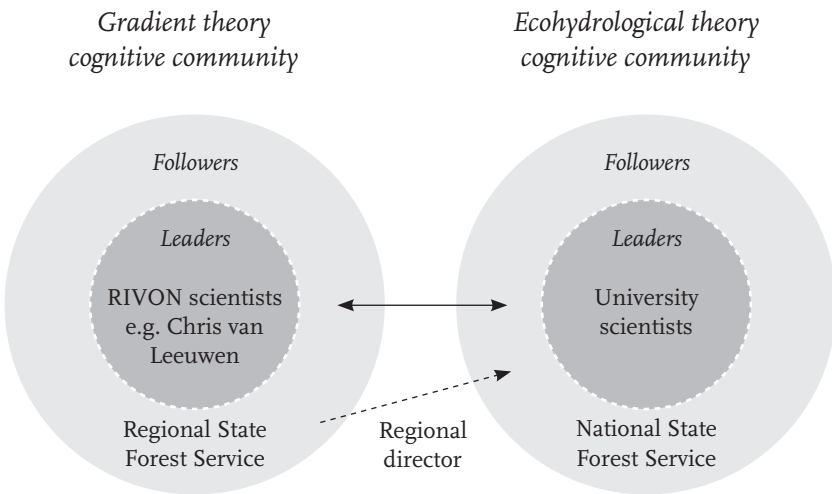

Figure 5.4: The regional State Forest Service director became convinced of the findings of the hydrologist and the plant ecologist. He left the gradient theory cognitive community and became a member of the ecohydrological theory cognitive community.

However, the battle had not been won yet. There was a lot of resistance against the implementation of the measures by field-level managers. Their boss still refused to support the findings of the ecologist and the hydrologist and the field-level managers followed his lead. Because of this, the implementation of measures against the claimed desiccation of the Drentsche Aa reserve was severely delayed. When, due to a number of wet years in the beginning of the 1990s the State Forest Service's machines got stuck, an expert team called 'wet water meadows' was invited to take a look at the matter. The team was led by a University trained researcher, who knew that the main issue in this case was the refusal of the regional State Forest Service officials to implement the closure of the ditches.

> *The biggest problem was the expertise, the fear and the lack of support from the people who had to carry out the measures in everyday life. They saw mountains that they did not know how to climb.*
>
> Teamleader, interviewed on 14 September 2005 in Ede

The teamleader proposed to start experiments together with both the University scientists and regional State Forest Service officials. Questions were addressed such as: 'What are the potentials of the area?', 'What can be done to realise these potentials?' and 'What does this imply for everyday management practices?' The expert team visited the area five

times together with the University scientists and the regional State Forest Service officials. On the basis of these visits, the expert team concluded that the desiccation could best be dealt with by increasing the groundwater level in the area. They also advised the removal of the acid top layer of the soil and of the deep ditches in the area.

The University scientists invited the new regional director to experimentally close some ditches. Their experiences in Poland had shown that, when certain conditions are met, wet water meadows do not need any management for peat-forming vegetation to re-develop. In Poland, the University scientists had found examples of areas that had not been managed for at least 15 years (no active management such as mowing or haymaking) and where the vegetation was still in very good condition. They found that the quality of both the hydrological situation and the vegetation was just as good and sometimes even better than in the Drentsche Aa area. According to the University researchers, the results from their research in Poland would also apply to the Drentsche Aa situation. Their experiments in Poland had shown that, as long as the hydrological situation is satisfactory, then the succession of vegetation goes so slowly that it does not matter if you skip management from time to time. The State Forest Service officials were still a bit sceptical but in the end they decide to participate. In an allocated area, the ditches were closed. At the same time, the leader of the field managers was strategically sidetracked.

> *Chris's gradient theory, which it all started with, was increasingly forgotten. New people came in. It all got bogged down. I am worried about the future of the Drentsche Aa now that people are not trained anymore to look at nature conservation in a holistic way.*
>
> State Forest Servive official, interviewed on 21 July 2005 in Middelburg

As the University way of thinking was gaining more authority within the regional Drentsche Aa State Forest Service office, the remaining opponents were simply sidetracked.

The new regional director felt that the expert team had respected and carefully considered the objections of the regional State Forest Service officials. After the experiments were carried out, he was convinced that, in the short term, the ecohydrological theory would work out fine in certain localities. However, he was still not convinced that it would also work in the longer term. This is when the director asked the University scientists to show him the situation in Poland. The University scientists took up the challenge and in 2001 organised a field

trip to Poland for the regional State Forest Service officials from the Drentsche Aa. The University scientists showed them examples of wet areas with nutrient-poor water. These areas still had a lot of valuable and rare plant species such as orchids and bog bean (*bestuurderanthes trifoliate*). The State Forest Service officials immediately became enthusiastic. The University scientists explained that these areas were not managed at all. To the State Forest Service officials this was an eye-opener. The trip convinced the regional State Forest Service officials (see Figure 5.5).

After the trip to Poland, the regional Drentsche Aa officials and the University scientists were on speaking terms again. Within a year of the visit to Poland, the State Forest Service started to increase the water level in parts of the Drentsche Aa reserve. They also closed the deep ditches. In the De Heest area in particular, this was done on a relatively large scale. Traditionally, De Heest was an area with meandering brooks and large diversity in soil types: there are areas consisting of glacial and eolian sands but also areas consisting of heavy clay from glacial moraines. De Heest is a groundwater discharge area through which the Drentsche Aa brooks used to flow in the past. According to the University scientists, this area had a lot of potential for re-developing peat-forming vegetation types. When the State Forest Service bought De Heest, it was an area with heavily fertilised meadows which were separated by lots of wooded banks. Fertilisation had destroyed the structure of the peat. By closing the ditches, the State Forest Service tried to restore the original peat-forming vegetation. They removed the topsoil of the meadows to remove some of the surplus nutrients. As a landscape with peat-forming vegetation is a very open landscape, the State Forest Service decided to manage the area by letting cattle room freely. This destroyed the wooded banks associated with the traditional farmers' landscape.

According to the University researchers, the Drentsche Aa area is a spectacular nature conservation success, with which the regional State Forest Service officials agree.

> *The plant ecologist and I are the intellectual parents of the restoration of the Drentsche Aa area, especially with regard to defining the potentials of the area. That was the engine which got the whole restoration process moving. I still love seeing that it is possible to move forward with such a large area.*
>
> Hydrologist, interviewed on 27 February 2006 in Wageningen

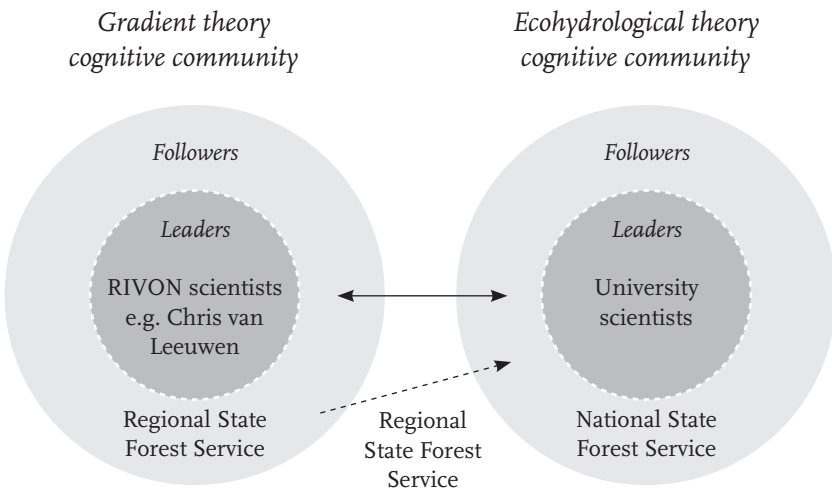

Figure 5.5: The field trip to Poland convinced the regional State Forest Service officials of the results of the research carried out by the ecohydrological theory cognitive community. They changed sides.

The boundary conflict seemed to have been settled (see Figure 5.6). The university scientist, whose permit to take students on field trips into the Drentsche Aa area had been redrawn in the early 1990s, was given a new ten-year permit as well as an old State Forest Service uniform as a peace offering.

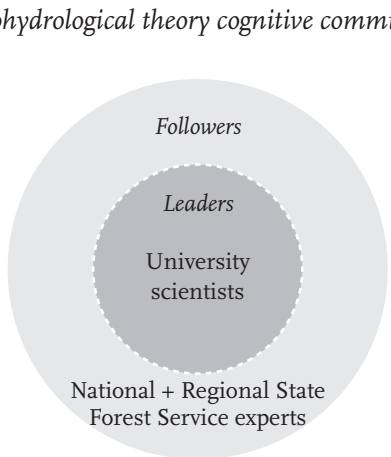

Figure 5.6: The struggle for professional authority seems to have been won by the community of the University researchers, at least for now. They have effectively monopolised the knowledge claim in the Drentsche Aa area.

5.4 Analysis

Let us now turn to the conceptualisation of this story in terms of governance and the nature of expertise.

5.4.1 Governance

With regard to governance, we stated that we wanted to study the involvement of the type and number of actors in the policy process in order to get an idea of the kind of governance process with which we were dealing. In terms of governance, this period did not see any changes or new initiatives. As in Chapter 4, the dominant mode is hierarchical governance. We observed mainly scientific experts involved in the production of implementation knowledge for nature conservation policy. When a conflict occurred between two cognitive communities over the implementation knowledge needed, the national or provincial policy makers distanced themselves from the conflicting knowledge claims. This would fit in with a hierarchical approach to governance in which science and policy are seen as different domains, the former concerned with practices of knowledge production and the latter concerned with practices of knowledge use.

5.4.2 Experts and expertise

Let us now turn to the nature and role of experts and expertise in this setting. With regard to the nature and role of experts and expertise, we stated that we wanted to study the number and type of cognitive communities, their boundary work strategies and their demarcation criteria. In the 1970s, 1980s and 1990s, there were two cognitive communities that claimed an expert identity and expertise. First of all, the regional State Forest Service officials and the RIN scientists formed a cognitive community in which the regional State Forest Service officials were the followers (outer circle) and the RIN scientists were the cognitive leaders (inner circle).

Second of all, the University scientists and the national State Forest Service experts formed a similar cognitive community in which the national State Forest Service experts were the followers (outer circle) and the University scientists were the leaders (inner circle).

In the late 1970s, the gradient theory cognitive community was no longer a dominant and central actor in relation to nature conservation expertise. They were no longer the only cognitive community with a claim to scientific nature conservation expertise. Therefore they had to engage in boundary work with another cognitive community. They

could no longer determine, without going into debate with anyone else, how nature conservation expertise was framed and thus how the problem could be solved. As a result, the University scientists and the State Forest Service officials both had to start negotiating discursive space on the basis of their respective interests. These processes of boundary work can be characterised as a demarcation exercise by means of which the University researchers defined themselves as a scientific community with its own scientific discipline and in which they moved beyond the gradient theory. During the boundary conflict, the cognitive communities used stereotyping as a boundary work strategy to gain advantage. They characterised themselves as belonging to the group that had found the undisputable objective truth. The members of the other cognitive community were seen to belong to the group who had missed the truth (and thus belonged to 'them'). When the gradient theory cognitive community tried to show that their expertise was superior to that of the other, they used demarcation criteria such as the ecohydrological theory being reductionist and being too focused on experiments (and therefore having little link to actual reality). The University researchers on the other hand criticised the gradient theory as being unfalsifiable and untestable. As expertise was framed on the basis not of content but of power, ecological-scientific knowledge became political. This power struggle over cognitive authority was highly influenced by boundary work strategies. This is very much in line with a policy process that includes scientific knowledge as an important problem-solving mechanism and therefore as an important legitimisation of the policy process. This is further supported by the fact that the boundary conflict only involved cognitive communities with a claim to scientific expertise. Farmers, for example, were not involved at all.

On the basis of Fleck's (1979) work, we had expected boundary work processes between the followers of both communities. Instead, we observed boundary work processes occurring between the followers of the gradient theory cognitive community and the leaders of the ecohydrological theory cognitive community. In the 1980s, the regional State Forest Service officials lost touch with the inner circle of their cognitive community and continued to fiercely defend their cognitive community's boundaries and expert identity against the perceived threat posed by the ecohydrological theory cognitive community. Even when the leaders of the ecohydrological theory cognitive community left the Drentsche Aa area to continue their research elsewhere, they still remained active in the debate. They continued providing new research results as arguments, they took part in the expert team 'wet

water meadows' and they organised the trip to Poland. So this boundary conflict is not between followers of different cognitive communities, but rather between followers and leaders. However, in line with Fleck, the followers of the gradient theory dogmatised their expertise substantially and defended it accordingly. They were very fierce in their boundary work. The leading scientists, on the other hand, were much more nuanced in the use of their theory and therefore they were also more nuanced in their boundary work.

The boundary work between the gradient theory cognitive community and the ecohydrological theory cognitive community illustrates the dynamic character of boundary work. While boundaries are drawn and re-drawn, the coalitions that go with them are re-defined in the process. At first, both the regional State Forest Service officials and the members of the ecohydrological theory cognitive community held onto their framing of expertise and protected it against change. Over time, some regional State Forest Service officials willingly allowed their framing of expertise to be challenged and changed. When their framing of expertise changed, the membership of their cognitive community also changed. When the boundaries were re-drawn and the coalitions that went with them were re-defined, old enemies became new allies: 'they' became 'we'. After the controversy, the two cognitive communities merged into one in which both the regional and the national State Forest Service experts were the followers (outer circle) and the University scientists were the leaders (inner circle).

At different points in time, what was to count as expertise was framed in different ways. At first, the gradient theory cognitive community had the monopoly on a claim to nature conservation expertise. Twenty years later, the situation had completely changed and the monopoly was assumed by the ecohydrological theory cognitive community. What counted as expertise did not conform to any criteria of logic or method, but rather reflected differences in the social and cultural positions of disputing cognitive communities and decision makers. In a different social and cultural setting, the outcome of the boundary conflict might have been completely different. What if Chris van Leeuwen had not left the RIN institute? What if the director of the regional State Forest Service had decided not to believe the ecologist and the hydrologist? Or what if the machines had not become stuck in the mud? Probably the outcome would have been different somehow, but it is impossible to say how different or with regard to which aspects.

5.5 Conclusion

What emerges here is the story of a controversy, the validity of two competing theories and their implications for the management of the Drentsche Aa area. So what happened?

There was consensus on the importance of the ecological values of the Drentsche Aa and the proper management to conserve them, but not on the proper ecological-scientific knowledge for management. The final agreement on the proper ecological-scientific knowledge was the outcome of boundary work between the University scientists and the State Forest Service officials. The problem of protecting biodiversity in the Drentsche Aa area could no longer be approached as a straightforward, uncomplicated situation. There was still consensus on the goal (protection of biodiversity and nature) but there was no consensus on the knowledge required to reach this goal (closing of deep ditches). The policy process still included scientific knowledge as an appropriate problem-solving mechanism. However, complexity increased as the content of this ecological-scientific knowledge became contested. The national or provincial policy makers distanced themselves from the conflicting knowledge claims between the cognitive communities. This would fit in with a hierarchical approach to governance in which science and policy are seen as different domains, the former concerned with practices of knowledge production and the latter concerned with practices of knowledge use.

All in all, we can conclude that, in this predominantly hierarchical setting, science was still seen as a problem solver (other types of knowledge were still excluded). The knowledge production process involved two cognitive communities with conflicting views on expertise. Disciplinary boundaries were not respected and therefore boundary work strategies took the form of stereotyping. Demarcation criteria of the gradient theory cognitive community included criteria such as the other expertise being reductionist and impractical. Demarcation criteria of the ecohydrological theory cognitive community included criteria such as the other expertise being untestable and unfalsifiable. We can interpret the nature and role of experts and expertise in this situation as expertise as ammunition.

6

The Drentsche Aa area as a National Landscape (1999-2007)

Vooruitstrevenden juichten het plan toe, behoudenden keurden het af en al spoedig had de voorzitter de bespreking niet geheel meer in de hand. Het was vooral hinderlijk, dat tal van deskundigen gelijktijdig het woord voerden - en omdat ze verschillende talen spraken, waren er slechts weinig luisteraars. [33]

Toonder, 1981b

6.1 Exploring the possibilities of creating a National Park

In 1993, the Provisional Committee for National Parks [34] proposed to nominate the Drentsche Aa area as a National Park because of its unique nature and landscape qualities (VCNP, 1993) (see Picture 6.1.). The State Forest Service was very pleased with this initiative. In particular Harry de Vroome, one of the founders of the Drentsche Aa reserve and still involved in its conservation, was elated when he heard this news. His aim had always been to protect the area from the post-

33 *Progressives cheered the plan, conservatives turned it down and soon the chairman had lost control over the meeting. It was particularly disturbing that several experts were talking simultaneously - and because they all spoke different languages, there were few listeners.* (Toonder, 1981b)

34 Provisional Committee for National Parks (*Voorlopige Commissie Nationale Parken*): an independent advisory committee on National Parks of the Ministry of Agriculture, Nature and Fisheries.

war land re-structuration - including measures such as draining, levelling, straightening of water courses and removal of old buildings - that was promoted by the government to establish industrial agriculture. A National Park nomination would be the crown of his life's work and the ultimate fulfilment of the *Gedachtenplan* (see Chapter 4). He had been waiting for this moment for more than 30 years. However, De Vroome's strategic purchase of species-rich wetland water meadows from farmers for nature protection had led to deep resentment among farmers (see Chapter 4).

Picture 6.1: Oudemolensediep, a very biodiversity-rich area of the Drentsche Aa and one of the reasons for wanting to nominate the area as a National Park. Picture taken by Edgar Stapelveld in the summer of 2006.

When the Provisional Committee for National Parks organised meetings in the Drentsche Aa area during which all major actors could respond to the proposed nomination, they were faced with angry farmers who resisted the proposed nomination which they felt would negatively affect their livelihoods. The designation would have meant that all land use in the park area would have nature conservation as its sole purpose. Many farmers considered this nomination plan an outright threat to agriculture in the area. There was much public protest against the perceived elitism of the policy makers and experts who wanted to declare the Drentsche Aa area a National Park. The

meetings became venues at which farmers en masse expressed their frustration. The Provisional Committee for National Parks felt that this lack of public support could become a serious barrier to the implementation of the plans.

To avoid open conflict, the Provisional Committee proposed to create a 'National Park with extended objectives' in which, in addition to nature, agriculture would have a guaranteed future (Van Bommel and Röling, 2004). It was the first time in the Netherlands that the Provisional Committee for National Parks had advised on the establishment of such park. To overcome resistance and provide a broad basis of public support for this new kind of national park, the Provisional Committee proposed to initiate a multi-actor negotiation process and advised the minister to install a so-called Regional Advisory Committee in the Drentsche Aa region (VCNP, 1998).

6.1.1 The Regional Advisory Committee

On 2 February 1999, a letter, signed by the Assistant Secretary of State, was sent out to all major actors involved in the Drentsche Aa area inviting them to join this multi-actor Regional Advisory Committee. A quote from this letter shows that the Regional Advisory Committee was charged to investigate the possibilities of establishing a National Park with extended objectives:

The extraordinary aspect of the terms of reference of the Regional Advisory Committee is that I ask it to investigate the possibilities of establishing a National Park with extended objectives. This notion has to be given meaning in such a way that, in addition to other actors and interests, farmers' representatives can participate in the deliberation structure and farmers can participate in the management of the landscape of the Drentsche Aa area. (Extract from letter from Assistant Secretary of State Faber, 2 February 1999).

In addition to the traditional policy actors in nature conservation policy, such as representatives of the Ministry of Agriculture, Nature and Fisheries (Ministry of LNV)[35], the Province of Drenthe and the State Forest Service, the Regional Advisory Committee invited non-traditional actors - such as representatives of the Farmers' Union NLTO, the BOKD[36]

35 Ministry of Agriculture, Nature and Fisheries (*Ministerie van Landbouw, Natuur en Visserij*; Ministry of LNV).

36 BOKD (*Brede Overleggroep Kleine Dorpen*): Association for interaction among small villages in Drenthe; largely focuses on the preservation of the cultural history of the area and the viability of the villages.

representing the interests of small villages and the tourist industry. All these actors decided to accept the invitation to join the committee. Box 6.1 lists the bodies represented on the committee. Given the history of conflict in the area, Assistant Secretary of State Faber carefully chose as chairman Henk van 't Land who was independent and had no previous ties with the area. Henk van 't Land was the president of a large water board in the north of the Netherlands. He had built an excellent reputation as *bestuurder*[37] by having amalgamated a large number of smaller water boards into one large one.

The invitation letter of 2 February 1999 also indicated that the Regional Advisory Committee would have to take existing policy - which represented the expertise of the regional policy makers (see Figure 6.1) - as its point of departure:

Box 6.1: Composition of the Regional Advisory Committee

- Organisation of Tourist Entrepreneurs RECRON/*Recreatieschap*
- State Forest Service (SBB)
- National Nature Conservation NGO (*Natuurmonumenten*)
- Farmers' Union (NLTO)
- Water Management Board Hunze and Aas (*Waterschap*)
- Association Broad Discussion Group Small Villages in Drenthe (BOKD)
- Water Company of the City of Groningen
- Community councils of Hunze and Aas, Assen, Tynaarlo
- Ministry of LNV
- Provincial Government of Drenthe

> *Because of the new kind of approach, I invite you to an open exchange of ideas with regard to the form and the content of [a National Park with] extended objectives which will fit in with existing policy.*
>
> Extract of letter from Assistant Secretary of State Faber, 2 February, 1999

The chairman took very seriously the task of taking existing policy as a framework. To prepare for the second meeting, an overview of all existing policy plans for the Drentsche Aa region was sent to the participants. The most important international nature conservation policy was the Bird and Habitat Directive and the European Network

37 A *bestuurder* is a manager or task leader, not a facilitator.

of Nature Areas, Natura 2000, which ensures the survival of specific species and habitats as laid down in the European Birds and Habitats Directive. A large part of the Drentsche Aa area was in the Natura 2000 network. On a national level, in 1990, the Ministry of LNV[38] had launched the Nature Policy Plan. This plan introduced the Ecological Main Structure (EMS), a national-level network of nature areas which included the Drentsche Aa. Last but not least, the national policy document *Nature for People, People for Nature* (LNV, 2000) also played a role by confirming the continued importance of the Drentsche Aa as part of the Ecological Main Structure.

Figure 6.1: Cognitive community of the policy makers in the Drentsche Aa.

European agricultural policy focused on limiting subsidies for European farmers. In addition, the Water Framework Directive (WFD), decided by the EU in 2000, stipulated reaching a good ecological condition for European water catchments in 2015. For the Netherlands, this would mean that about two-thirds of the current agricultural area, i.e., about 40% of the total Dutch land surface would have to be taken out of production even to reach the minimum standards of the WFD (Van der Bolt et al., 2003). The national farmer organisation's (NLTO) position was that the only way to deal with the WFD was to demand a special position for the Netherlands and derogation from the WFD (Van Bommel and Röling, 2004). Meanwhile nationally, Dutch farming was embedded in, and constrained by, regulatory frameworks seeking to redress the worst impacts of modern agriculture. Intensive

38 The Ministry of Agriculture, Nature and Fisheries took over responsibility for nature conservation from the Ministry of Culture, Recreation and Social Works.

bio-industry (intensive beef, pig and poultry production) was severely curtailed. Draconian 'manure laws' tried to reduce the pollution of groundwater and the deposition of atmospheric nitrates; pesticide use was subject to various permits, regulations and prohibitions.

Within this policy framework, the Regional Advisory Committee would have to give meaning to the National Park with extended objectives. As this was the first of its kind, it was unclear to the Regional Advice Committee what the meaning and implications of this would be. What the committee needed most was a clear vision on what such a park could entail and to which all actors could agree. The discussions that followed can be characterised as a brainstorming process during which a number of prominent features kept coming up:

> *These issues came up repeatedly during the discussions and can therefore be considered to form a common element in the responses: Giving a prominent place to cultural history; Experiencing the landscape in combination with agriculture and nature; Aiming at a living landscape with a clear identity; Future for sustainable agriculture; Take viability, employment and income into account; Take residents into account; Take the possibilities of water management (quality and quantity) into account; Recreation and tourism should be in harmony with the area; Link up with other policy plans; From a win-lose situation to a win-win situation.*
>
> Extract from minutes of the first meeting of the Regional Advisory Committee

Box 6.2: The Belvedère policy document

When in 1999 the Regional Advice Committee was just having its first meetings in the Drentsche Aa, miles away a new policy document was published in The Hague. This new Belvedère policy addressed the conservation of the cultural historic identity of important areas in the Netherlands. The Belvedère policy was a joint effort of four ministries: the Ministry of Education, Culture and Science, the Ministry of Agriculture, Nature and Fisheries, the Ministry of Housing, Spatial Planning and the Environment, and the Ministry of Traffic and Water Management. With the Belvedère policy document, the government acknowledged that cultural history was an important source of inspiration for spatial planning and placed the conservation of cultural historical elements prominently on the political agenda. The Belvedère policy document did not have the status of a law but was meant as a source of inspiration for provincial and local policy. It was quite influential on developments and planning in the Drentsche Aa area.

Guided by the Belvedère policy, the cultural historical identity of the Drentsche Aa area became an important principle for the spatial planning and use of that area. It presented a vision of how to take into account the cultural historical qualities while planning spatial developments.
On a national level, the Belvedère policy document was an important building block for the Fifth Policy Document on Spatial Planning which was published later (in January 2006). This Fifth Policy Document was the policy document in which 20 areas in the Netherland, including the Drentsche Aa, were nominated as National Landscapes. In particular, the notions of an identity strategy, a living landscape, multi-functional agriculture, cultural history and multi-functional land use kept coming up and were therefore considered important elements of the vision.

During the following meetings, the representative of the BOKD was able to formulate a coherent vision for the National Park with extended objectives. The BOKD as an association for interaction among small villages in Drenthe largely focuses on the preservation of the cultural history of the area. Its spokesman is a highly motivated and articulate individual, Dr Hans Elerie, who did his doctoral research on the cultural history of one of the villages in Drenthe in an area quite comparable to the Drentsche Aa area. He belonged to a cognitive community with expertise on cultural history (see Figure 6.2).

According to Hans Elerie:

> *When dealing with conservation and development of landscape and ecology in the Drentsche Aa area, we should focus our attention on identity. The regionally specific characteristics and developments of both nature and agriculture give the area its specific identity and will form its new face in future....We can convincingly speak of a living landscape that has been able to hold onto its identity throughout time and change....If we take an identity strategy we can incorporate the intrinsic dynamics of the system. This identity strategy can be linked to an active policy which relies on the adagium 'conservation through renewal'.... One of the most important tasks for the identity strategy is to keep the process of identity formation going in times of dynamics and functional change.*
>
> Vision as presented by Elerie during the meeting of the Regional Advisory Committee on 9 June 1999 in Assen

Cultural history cognitive cognitive community

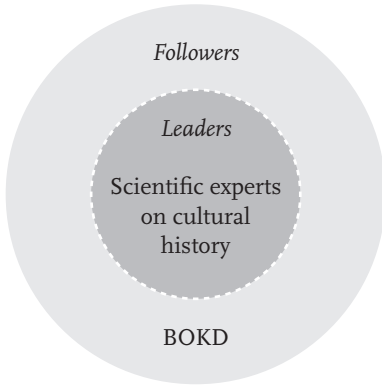

Figure 6.2: Cognitive community with expertise on cultural history in the Drentsche Aa.

Hans Elerie chose the concept of identity as the leading principle. He operationalised it terms of a multi-functional living landscape. In this vision inspired by cultural history, nature and agriculture are both important elements of this landscape. Elerie carefully and explicitly linked up with existing policy plans - such as the Belvedère project - which also took regional diversity and landscape identity as important points of departure for landscape conservation (see Box 6.2). He also linked the identity strategy to the notion of conservation through renewal which also found its origin in the Belvedère project. The notion of conservation through renewal - as interpreted by Elerie - offered room for agriculture as well as for nature.

In line with this vision, the Regional Advisory Committee decided to call the Drentsche Aa area a National Landscape instead of a National Park with extended objectives. The inspiration for the name, National Landscape, came from the Belvedère policy (see Box 6.2) where it was first mentioned. The chairman of the Regional Advisory Committee explained the choice of the name:

> *It was clear to everyone that the Drentsche Aa area is not a National Park in a strict sense. The Drentsche Aa area is more than a strict nature reserve such as other national parks in the Netherlands are. Agriculture and villages are an integral part of the area....Therefore we have chosen to call it a National Brook and Village Landscape Drentsche Aa instead of a National Park.*
>
> Chairman of the Regional Advisory Committee in Arcadis, 2002, p. 5

The National Landscape formula was chosen deliberately because, in a national park, all land use is dedicated to nature, whereas in a National Landscape (or a National Park with extended objectives) multi-functional land use is accepted to a certain extent. Therefore the label, National Landscape, was thought to lead to less resistance than the label, National Park.

Despite the fact that the notions of conservation through renewal and National Landscape offered explicit room for agriculture, the Regional Advisory Committee's discussions show that it was unclear what kind of agriculture they were aiming at. The farmers' representative was afraid that a multi-functional landscape would first and foremost provide room for multi-functional farming, in terms of what farmers could offer society by way of ecological services, space for recreation, special regional products, etc., and would exclude intensive modern farming. This concern was repeatedly expressed by the farmers at meetings of the Regional Advisory Committee. For example, during a meeting in Zeegse, the farmers' representative said:

> *The policy should not aim at conservation. It is important to maintain entrepreneurship. I do not expect my constituency to applaud the current initiative.*
>
> Farmers' representative, Meeting of the Regional Advisory Committee on 9 February 1999 in Zeegse

This quote illustrates the importance to the farmers' representative of entrepreneurship and economically viable agriculture. The issue of agriculture kept coming up time and again during the discussions. There was disagreement over the way that this issue was addressed and/or interpreted in the Regional Advisory Committee's advice. The final advice of the Regional Advisory Committee did not reflect these discussions.

6.1.2 The final advice

At the end of the year, on 19 November 1999, the Regional Advisory Committee published the first official draft of its advice. This draft took the concepts of identity of the landscape and conservation through renewal as cornerstones for the future development of the area. The document stated:

> *The committee feels that the extended objectives can be accomplished by means of an identity strategy. This is a strategy that aims at conservation through renewal by taking the identity of the*

> *landscape as the point of departure....Identity is the best basis on which participation of the villagers and the users (agriculture and nature) as well as their support can be organised.*
>
> Regional Advisory Committee, 1999, p. 6

This shows that the advice of the Regional Advisory Committee foresaw a multi-functional landscape inspired by Elerie's vision.

The Regional Advisory Committee presented their advice to Assistant Secretary of State Faber on 6 July 2000. The letter accompanying the advice states:

> *The Regional Advisory Committee advises the instalment of a Regional Preparation Committee for the formulation of a Management, Design and Development Plan (BIO Plan) for the National Brook and Village Landscape....The Regional Preparation Committee should strengthen the identity of the Drentsche Aa area, encourage the collective strategy of conservation through renewal and collaborate with the inhabitants of the region.*

This quote reveals that the Regional Advisory Committee advised Assistant Secretary of State Faber to appoint a committee to formulate a plan (BIO Plan) for the National Brook and Village Landscape Drentsche Aa. The Regional Advisory Committee left to its successor the question of whether a multi-functional landscape required multi-functional agriculture or whether it allowed for intensive agriculture.

All in all, the analysis of the formulation of the Regional Advisory Committee's advice shows that at the beginning of the negotiations everything was new. It was a new procedure that most actors had never dealt with before. During the meetings, the process as well as the content were negotiated. The terms of reference laid down by the ministry stipulated specific game rules, namely, that the National Park with extended objectives had to fit in with existing policy. As a result, not all views were equally represented in the Regional Advisory Committee's advice. Whereas Elerie's view and notions on a multi-functional landscape were quite influential, it remained unclear whether intensive modern agriculture as advocated by the farmers' representatives would also be included. For a better understanding of the influence that the various actors had on the formulation of the policy in the Drentsche Aa area, we now continue with an analysis of the formulation of the BIO plan in line with the Regional Advisory Committee's advice.

6.2 Formulation of the BIO Plan

6.1.2 The regional multi-actor Preparation Committee

In spring 2001, the successor of the Regional Advisory Committee, the so called Preparation Committee, went to work on the formulation of the BIO Plan. The composition of the Preparation Committee was similar to, and yet different from, the composition of the Regional Advisory Committee. All the organisations and interests that had been represented as actors on the Regional Advisory Committee were also represented as actors on the Preparation Committee. Although the composition of the committee did not change much in terms of interests and organisations, it did change in terms of the individuals that represented their organisations. Of all 16 individuals, only four participated on both platforms. Among the 'stayers' were the chairman and Hans Elerie (BOKD).

On Monday morning, 29 January 2001, the members of the Preparation Committee met for the first time in the Provincial House in Assen. The meeting was opened by the chairman who explained that the goal of the Preparation Committee was to formulate a policy plan for the National Brook and Village Landscape. Locating the first meeting in the Provincial House in Assen emphasised the important role of the provincial policy makers. In addition, the chairman informed the members of the Preparation Committee that they were operating on the Province's playing field. This was how the rules of the game were communicated.

After everyone had been introduced, the Preparation Committee could start its work. Taking conservation through renewal as a point of departure, and identity as a source of inspiration, the committee initiated discussions on the formulation of the BIO Plan where the Regional Advice Committee had left off. The issue of intensive agriculture re-emerged. Although the terms of reference reaffirmed that there would be space for farmers in the Drentsche Aa, and that the Drentsche Aa could not maintain its character without farmers, the intensive farmers felt that the meetings offered very little in terms of concrete prospects. The farmers' representatives felt insufficient attention was paid to conventional, intensive farming:

> *We need much more discussion on agriculture in the Drentsche Aa region. At this moment, the discussion focuses mainly on multi-functional agriculture. It seems that some people assume that conventional agriculture is not feasible. This does not correspond to*

the way my constituency experiences the situation.

Farmers' representative, Meeting of the Preparation Committee on 8 October, 2001

Farmers have always come off badly in this area. That is a process that has already been going on for over 30 years. Agriculture is always victimised for the benefit of nature.

Farmers' representative, interviewed on 1 July 2003 in Rolde

The farmers' representatives on the Preparation Committee were young farmers from the NLTO Farmers' Union that had taken over conventional (intensive) farms from their fathers. They were full-time professional farmers that had survived the scale enlargement and had learned one lesson: survival means being able to be more competitive than the Belgians, Germans, or one's neighbours. They knew that they were totally dependent on exports and hence on competitiveness, including within Europe where all farmers had equal access to subsidies. This should not be taken lightly. The moment the professional farmer feels he is hemmed in and has lost his space for responding to pressures from the market, in terms of crop choices, investment, new technologies, etc., he believes that he will not survive (Van Bommel and Röling, 2004). The farmers' representatives did not want farms that were paid for by nature management, or other compromises. When it came to multi-functional farming, they feared that supply would be much greater than demand. They wanted farms that could compete on the European market and hence could adapt to the demands of that market without being hampered by regulatory frameworks to protect nature. All in all, the farmers' representatives and their constituency saw little option but to continue to compete by supplying in bulk to the European and global markets. Staying on the treadmill was seen as an essential pre-requisite for survival (see Figure 6.3).

On the Preparation Committee, the State Forest Service representatives were annoyed by the insistent demand for space for intensive agriculture by the farmers' representatives. They felt threatened by the farmers' resolve to resist until their demands were met. The unique and precious herbal flora in the brook meadows, and its turbulent conservation, had instilled a strong awareness among the State Forest Service staff of the vulnerability of the nature under their protection. This awareness had, in turn, instilled a deep suspicion and antipathy with respect to modern agriculture that was seen as a major threat to their unique area. The State Forest Service was subsidised under a national scheme to revive rare flora and fauna. The rarer the vegetation and the more that vegetation adhered to the criteria set nationally, the higher

Figure 6.3: Cognitive community of conventional farmers in the Drentsche Aa.

the payment. Hence, the State Forest Service had strong incentives emanating from the national level to fight for conditions that allowed meadow orchids, black rapunzel (*Phyteuma nigrum*) and other rare plants to flourish. As the State Forest Service officials followed the ecohydrological theory (see Figure 6.4), hydrological research from the University had further provided the State Forest Service officials with new ammunition. This research had shown that the rainwater that infiltrates on the plateaus charges the seepage on which the rare vegetation in the water meadows depend (see Figure 6.5). As the plateaus are used for intensive farming, the State Forest Service officials feared that the pollution associated with these modern farming practices would resurface as seepage in their water meadows. The State Forest Service representative feared that a time bomb was ticking away. In reaction to the farmers' demands, the State Forest Service representative formulated his own demands:

> *Nature is negatively influenced...by the modern land use on the higher grounds. That situation is unacceptable. The Drentsche Aa area is an extraordinary landscape and in the past a fundamental choice was already made to conserve it. We should stand by that decision and accept its consequences.*
>
> State Forest Service representative, interviewed on 9 January 2003 in Assen

So the incentive structures (payment for acreage of vegetation types), and the State Forest Service's conviction that its rare flora required nutrient-poor conditions and that any compromise with farmers implied its destruction, led the State Forest Service to the opinion that there was little room for modern agriculture in the Drentsche Aa area.

Ecohydrological theory cognitive community

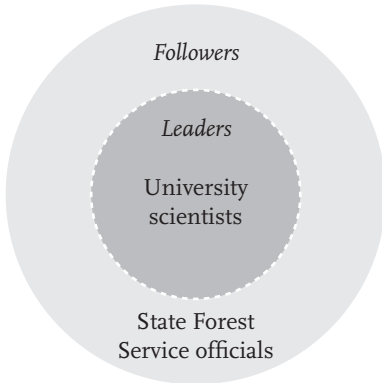

Figure 6.4: Cognitive community of the nature conservationists in the Drentsche Aa.

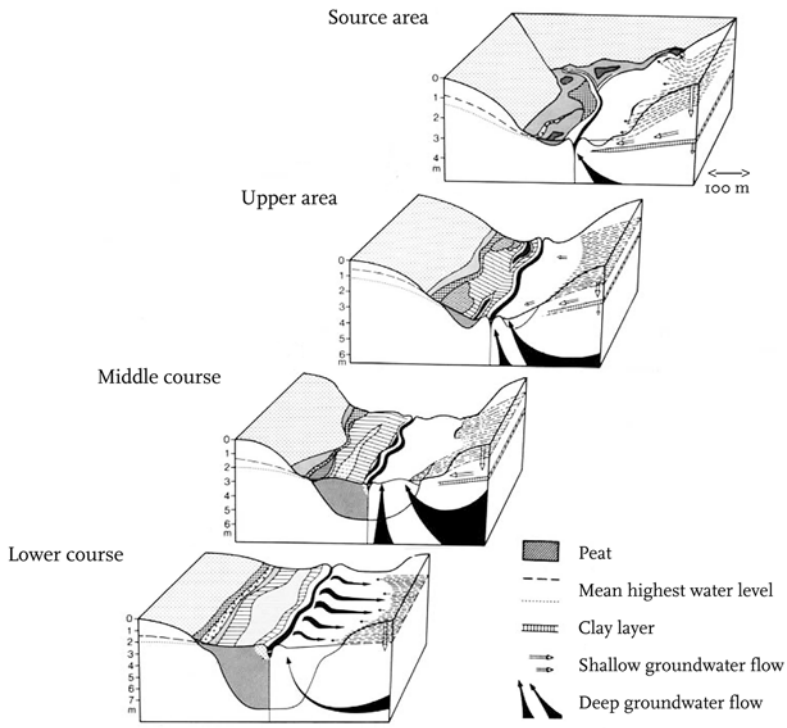

Figure 6.5: Regional groundwater flows (adapted from Grootjans, 1980 in: Grootjans et al, 2002).

Although both the farmers' representatives and the State Forest Service representatives in the Drentsche Aa agreed on the National Landscape nomination and that the multi-functional landscape needed to be preserved through conservation through renewal, this agreement was only skin deep. Decades of pent-up frustration had led to mutual distrust:

> *It is easy for them because they get paid at the end of the month. They don't have to make a living in this area. We do....The State Forest Service's representative can talk very convincingly about agriculture being part of the landscape, but when it comes down to making decisions all of a sudden he changes his opinion. It is very difficult to get him to stand by his agreements. He does something different than he says he will do.*
>
> Farmers' representative, interviewed on 1 July 2003 in Rolde

We are dealing with a very specific group of farmers. The progressive farmers have long left the Drentsche Aa area. A negative selection has occurred. We are stuck with laggards and with whiners. (Henk Post, State Forest Service representative, interviewed on 9 January 2003 in Assen)

Processes of mutual stereotyping occurred in which the farmers framed the State Forest Service officials as untrustworthy ('It is very difficult to get him to stand by his agreements') and elitist ('They don't have to make a living in the area'). The State Forest Service officials framed the farmers and their expertise as unprogressive ('We are stuck with laggards').

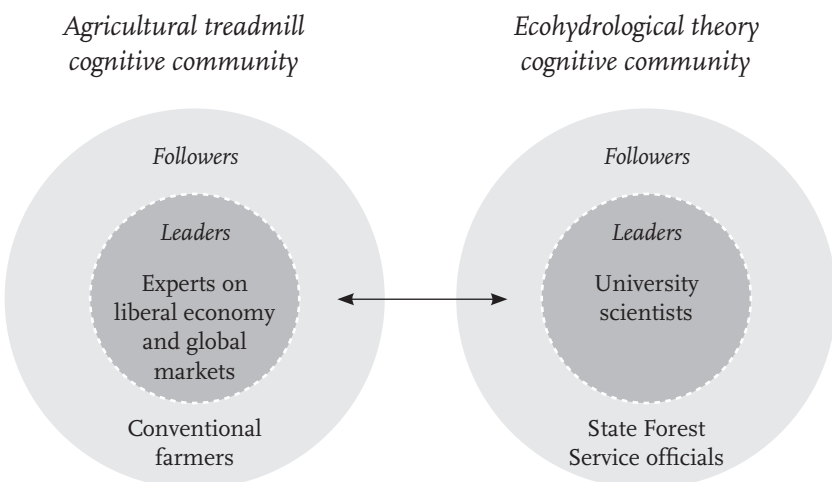

Figure 6.6: Boundary work between the farmers and the nature conservationists.

At a certain point, the boundary conflict (see Figure 6.6) between the State Forest Service and the farmers threatened to blow up the whole process. During the formulation of the BIO Plan, the State Forest Service representative and the farmers' representative went on a field trip to an area located between the villages of Anloo and Anderen. To the State Forest Service representative, this area presented unique abiotic conditions where rare vegetation could be re-developed: the soil of the area contained a lot of bolder clay. To farmers, this area was also of great importance because it offered space for new modern intensive farms. During the trip, the State Forest Service representative said that he would do anything within his power to prevent this area falling prey to new farm development. At the following Preparation Committee meeting on 3 June 2002, the farmers' representative named and blamed the State Forest Service representative in public and stated that the farmers were not willing to continue their cooperation if the official State Forest Service policy was to frustrate farm development as much as possible. As the completion of the BIO Plan was under time pressure, the chairman of the Preparation Committee had to keep the deliberation process going. He did not have time to invest in the resolution of this charged conflict. He fended off the immediate problem by arguing that an official public meeting was not the right place to settle these kinds of conflicts and suggested that the farmers' representative and the State Forest Service representative meet in private and settle their differences.

This resulted in the 'Pie Bakers' Deliberation' [39], a series of meetings that allowed informal interaction between the State Forest Service representatives and farmers' representatives under the supervision of the chairman of the Preparation Committee, and the regional broker [40] in the Drentsche Aa area. The Pie Bakers' Deliberation members met in informal settings (such as local pubs) and discussed their disagreements. The Pie Bakers' Deliberation functioned on the margins of the official regional platform. The members developed a new metaphor - no longer busy with *dividing up the cake* but *seeking to bake a new kind of cake together*. The metaphor of the cake proved a very powerful concept to bridge the divide between the farmers and the State Forest Service.

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39 This metaphor was coined by Professor Cees van Woerkum from Wageningen University, who is a regular speechmaker on rural issues throughout the country. He distinguishes between distributive negotiation and integrative negotiation. In the former, each participant tries to get the largest possible slice of the pie. In the latter, the participants try to bake a pie together (Van Woerkum and Aarts, 1998, p. 279).

40 Regional broker (*Gebiedsmakelaar*): The job of a regional broker is to encourage, coordinate and promote plans for rural development resulting in integrated projects.

However, because of its informal character, the Pie Bakers' Deliberation was very threatening to the Drenthe Provincial Authorities. They could not control what was happening during these deliberations and they were afraid that the conflict between the farmers and the nature conservationists might escalate even further. This would have had serious consequences for the Preparation Committee. The provincial policy makers and politicians first tried to forbid the Pie Bakers' Deliberation, and this did not impress its members:

> *This is a free country. It is up to me to decide whom to invite for a cup of coffee.*
>
> Regional broker, interviewed on 30 September 2003 in Assen

When the provincial policy makers and politicians discovered that the Pie Bakers' Deliberation could not be forbidden because of its informal character, they responded by simply denying its existence.

6.2.2 Consultation

During the formulation of the BIO Plan, attempts were made to actively inform the constituencies of local farmers about the work of the Preparation Committee. The assumption was that if the local farmers were well informed they would understand and appreciate the plan. Several information evenings and discussion evenings were organised to inform the farmers about the BIO Plan.
The local farmers were very interested in being involved in the formulation of the plan, because it allowed them to hold decision makers accountable. Instead of public support for the BIO Plan in terms of understanding and appreciation, however, the participation of these farmers in the information and discussion evenings led to frustration. The farmers often became disillusioned about being involved in regional policy:

> *During one of the first discussion meetings that I joined, a provincial official told me: 'whether the Drentsche Aa area is called a National Park or not, we will just implement our policy plans anyway'. That is what he told me straight to my face. He was honest, but I always keep this in the back of my mind. The province has laid a certain claim to this area whatever we say or do.*
>
> Farmer from Tynaarloo, interviewed on 11 Augustus 2005 in Tynaarloo

Local farmers throughout the region shared the view that the Preparation Committee did not intend to share any responsibilities with them. They were allowed to have a say in the matter, but it remained up to

the Preparation Committee whether or not their say would be taken into account. This gave them the feeling that they were not respected and that their input was not taken seriously.

> *They want to involve the people to have a so-called say in the matter. Everyone in the village is very doubtful about this. What are we talking about? About air! It is all fake.*
>
> Farmer from Tynaarloo, interviewed on 11 Augustus 2005 in Tynaarloo

These local farmers therefore lost trust in the Preparation Committee and became sceptical about the whole process. They were confronted with targets that had been set at a higher level without their input, but which nonetheless they were asked to support. As a result, local farmers no longer believed that the BIO Plan had anything to offer. They stopped coming:

> *This question that you asked.... Is the National Landscape on people's minds? Yes, I think people are thinking and talking about it. But people just do not go to meetings anymore because, if nothing good ever comes from it, it is better to stay away. If you participate, you are also - at least in part - responsible for the outcome.*
>
> Farmer from Anderen, interviewed on 21 September 2005 in Anderen

These local farmers distanced themselves from the plan and felt increasingly disconnected from it. So despite the attempts to actively involve the local farmers in its formulation, the BIO Plan did not achieve the desired legitimacy and recognition. On the contrary, reporting to local farmers even aggravated feelings of disconnection and alienation.

6.2.2 The BIO Plan

While the farmers' representatives and the State Forest Service representatives still met on a regular basis in the Pie Bakers' Deliberation, the BIO Plan was completed under time pressure by a major Dutch consultant (Arcadis). There was, therefore, no time to address the conflict between the nature conservationists and the farmers and bring their views together. From the outset, the point of departure had been that existing policy could not be questioned, or as the chairman of the Preparation Committee phrased it:

> *It has never been our intention to formulate new policy. We have always tried to take existing policy as the point of departure as much as possible.*
>
> Chairman of the Preparation Committee, interviewed on 6-12-2006 in Groningen

This quote shows that from the outset there was limited room for negotiating the contents. The formal policy perspective was dominant. Within this policy framework, in the BIO Plan precedence was given to multi-functional land use in the Drentsche Aa rather than intensive modern farming:

> *(Because of European agricultural policy) abiotic constraints such as soil type, landscape values, conditions set by spatial planning and environmental policy, and the specific type of farm determine the space for (agricultural) development. The space for the development of large-scale, intensive farms that can compete in a world economy is limited in the Drentsche Aa area.*
>
> Arcadis, 2002, p. 15

At the time of the Regional Advisory Committee, Elerie's eloquent pleas and the general goodwill had already earned him a powerful position in the area.

In the Preparation Committee this also gave him a voice in writing important sections of the BIO Plan. The BIO Plan adopted the identity of the landscape as a point of departure as well as the notion of conservation through renewal. As the views of the BOKD were in line with the formal policy perspective, the BOKD was able to have quite a lot of influence on the specific formulation of the BIO Plan. The BOKD and the policy makers formed a coalition (see Figure 6.7).

Coalition of the policy-based cognitive community and the cultural history cognitive community

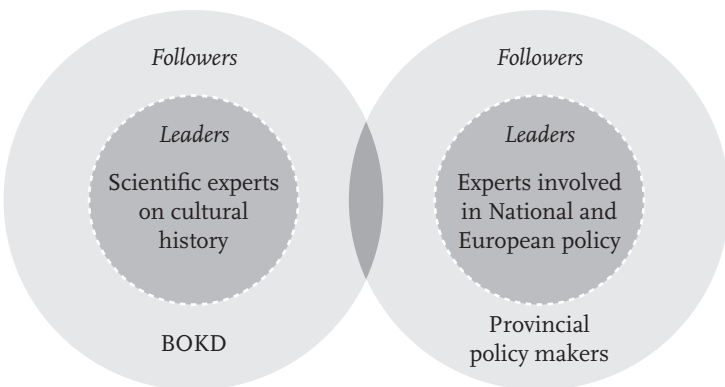

Figure 6.7: Coalition of two cognitive communities.

The final version of the BIO Plan states:

> *One of the points of departure is a landscape-oriented development philosophy called conservation through renewal. This is a guiding principle for the assessment of plans and projects. This philosophy assumes that the identity of the area can only be conserved and strengthened when the practical value of the area can keep developing and renewing itself. The current landscape and its history are a common basis for this.*
>
> Arcadis, 2002, p. 8

Despite the fear of the State Forest Service representatives, the interests of nature conservation were also well represented in the BIO Plan because these too fell inside the latitude of acceptance of the dominant policy framework (see Figure 6.8).

The latitude of acceptance contains all the positions on a particular topic that are found acceptable. At some border point, positions are no longer accepted. As this border is crossed, the latitude of rejection is entered. The latitude of rejection contains the positions on an issue that are rejected. As shown in Figure 6.8, the view of the State Forest Service falls inside the latitude of acceptance and is therefore negotiable. The view of the conventional farmers falls inside the latitude of rejection and is therefore not negotiable.

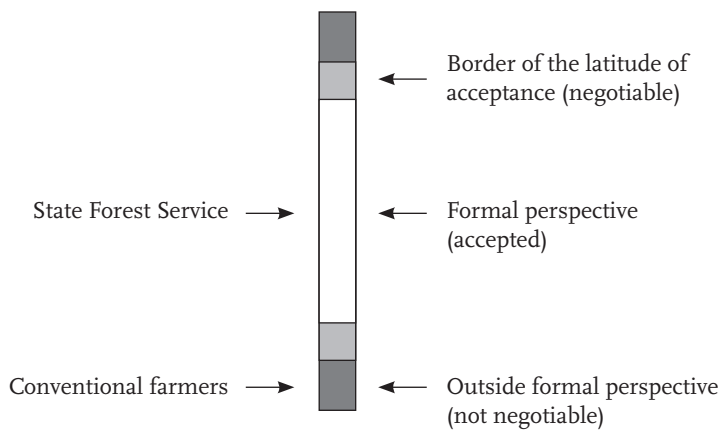

Figure 6.8: The formal policy perspective and its latitude of acceptance.

As from 1965 onwards (after the publication of the *Gedachtenplan*), nature conservation interests had steadily been institutionalised into

overall national and regional spatial planning (see Chapter 4). These interests had also been incorporated in the implementation of nature conservation policy, such as the implementation of the Bird and Habitat Directive and the Ecological Main Structure (see Arcadis, 2002). To reach these goals, intensive farming in the Drentsche Aa area was cut back further in spatial planning, or as the provincial policy maker stated:

> *In our Provincial Spatial Plan ('Provinciaal Omgevingsplan, POP') there are certain areas in the National Landscape where you want to give priority to nature in future. You don't want intensive modern farms in those areas. But what if a farmer does not cooperate? You cannot force that farmer to leave because everything should be on a voluntary basis. Well, what we can do then is just not give him any new permits, e.g., to build new stables or for further drainage.*[41] *Our policy in that area is nature development and the policy takes precedence. So that farmer will be in the wrong place at the wrong time.*
>
> Provincial official and secretary of the Deliberation Committee, interviewed on 21-08-2003 in Assen

We can conclude that the interests of the large-scale, intensive farmers were the least represented in the formal perspective and therefore their views fell outside the latitude of acceptance of the BIO Plan. The BIO Plan was in fact a set of sectoral statements with the farmers' representatives not even agreeing with the statement about agriculture.

6.3 The National Brook and Village Landscape, the Drentsche Aa

6.3.1 The regional multi-actor Deliberation Committee

On December 4, 2002 the BIO Plan was accepted and the Minister of Agriculture, Nature and Fisheries - Minister Cees Veerman - officially opened the area and declared it the National Brook and Village Lands-

41 The rare vegetation types targeted by the State Forest Service require very high water tables. The rationalisation that took place in the Drentsche Aa area in the 1970s led to the construction of drainage canals and other measures to minimise the risk of flooding and to get rid of surplus water as fast as possible. So restoration of a high water level is a necessary condition for nature conservation. Flooding of arable fields is disastrous for crops such as potatoes. So, by withholding permits for drainage or other new farm developments, the Province can make it impossible for professional intensive farmers to stay in such an area.

cape, the Drentsche Aa. The implementation of the BIO Plan is now guided by a Deliberation Committee (*Overlegorgaan*, literally, deliberation body). Its primary function is administrative, and its members have to make sure that policy is implemented as planned. The composition of the Deliberation Committee is virtually the same as that of the Preparation Committees which preceded it.

The Deliberation Committee first elaborated the BIO Plan into three plans: the Integrated Opportunity Map, the Landscape Vision and the Recreational Mobility Plan. These plans started where the BIO Plan left off and brought different sectors together. The conflict between the nature conservationists and the farmers resurfaced. The negotiation process in the Pie Bakers' Deliberation progressed slowly and it still proved very difficult to bring and hold together the nature conservationists and the farmers. The inflexible attitudes continuously threatened to stall the deliberation process. Again deliberation was reduced to negotiation among sectoral interests in which each actor tried to negotiate separate space for his/her own interest instead of coming to an integrated, synergistic whole.

In the meantime, while negotiations among formal representatives with official mandates were bogged down, their constituencies were experimenting with all kinds of creative ideas (see section 6.3.2). A number of agricultural entrepreneurs saw possibilities to enlarge or specialise their enterprises. Some decided to sell their farms and move to other parts of the country where sufficient land was available. Others decided to change to multi-functional agriculture. The actors on the official formal platform ignored these experiments on the local level. Apparently, people closely involved with the local resource found it easier to agree than formal actors. On the formal platform, the official NLTO position was still that that part-time farming and multi-functional farming would dilute the voice of the conventional intensive farm interest. Given the diversity of farm interests in the Drentsche Aa, this position no longer represented the interests of the many hobby farmers, part-time farmers and multi-functional farmers in the Drentsche Aa area. Local developments were overtaking the developments on the platform. At a certain point, the chairman felt something needed to be done to move forward:

> *Multi-actor negotiation requires participants to have certain qualities. I do not see much of those qualities in either the nature conservation representatives or in the farmers' representatives, and that worries me. In the region there are several initiatives in which*

farmers are experimenting with new ways of farming. However, the farmers' representative here has a one-track view. On several occasions his attitude has antagonised other people. I am going to tell him that he should reconsider whether he is the right person to represent the agricultural sector on this platform, and if we want to continue like this. But what applies to the farmers also applies to the nature conservationists. Nature conservation in the Drentsche Aa area needs a better image. Therefore I have asked the State Forest Service to take their current representative off the Deliberation Committee if he does not display a more cooperative attitude.

Chairman of the Deliberation Committee, interviewed on 6-12-2005 in Groningen

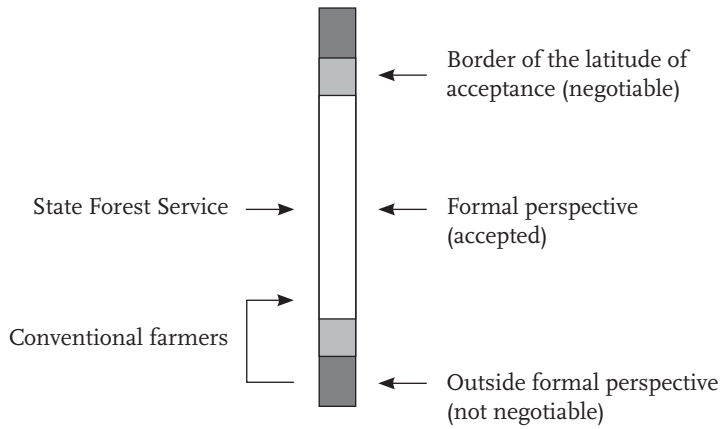

Figure 6.9: Conventional farmers are pressured to move with the dialogue group.

The chairman felt that both actors had little understanding of what it takes to contribute to a dialogue. He therefore pressured them to compromise and move with the dialogue. The State Forest Service representative was replaced by a more moderate representative. The farmers' representative decided to compromise and move with the dialogue group (see Figure 6.9.). This settled the issue and the multi-actor platform could move forward again. The Integrated Opportunity Map, the Landscape Vision and the Recreational Mobility Plan were accepted and guide the implementation of the BIO Plan.

6.3.2 Self-organisation

We now discuss some of interesting experiments that show how local actors in practice contributed to the BIO Plan and its idea of multi-functional agriculture in the Drentsche Aa area. Interestingly, most

initiatives explicitly avoided government involvement, which is often perceived as meddling that can only lead to delay.

Rural entrepreneurship

One way local farmers in the Drentsche Aa region tried to adapt to the multi-functional landscape envisioned in the National Landscape policy was by taking advantage of the new income-generating possibilities that it offered. Increased tourism, for example, offered farmers the opportunity to start small-scale businesses that served the demands of the increased number of visitors:

> *I used to have a potato farm. I have now created a forest on my land and started a camp site. The forest is subsidised for the coming 20 or 30 years. The camp site is big enough to be profitable.*
>
> Rural entrepreneur interviewed on 21 June 2006 in Anderen

In a similar vein, other entrepreneurs initiated projects aimed at selling regional products, opened their farms to visitors from urban areas, or combined farming with day-care activities. The income-generating activities were mostly demand-driven and focused on earning income. When these activities proved successful, other people followed.

Expert Farms of Drenthe

Another informal initiative which took the multi-functional landscape as envisioned in the National Landscape policy as an opportunity was the Expert Farms of Drenthe [42] initiative. This project brought together dairy farmers in an effort to help them improve the quality of manure, as this would allow dairy farming to be incorporated in the multi-functional landscape. This approach required a total rethinking of the farming system. It focused on new ways of feeding dairy cows. Instead of protein-rich concentrate, the farmers switched to feeding their cows protein-poor rough feed. The project was initiated in 2001 by the Platform for New Agriculture [43] and carried out by the consultant, ETC. The project participants swapped their experiences in study groups. The aim of the study groups was the improvement of individual farming returns.

> *After a study group meeting you don't really go home and immediately change your whole farming system. It is a slow process. After a while, you get acquainted with this new way of thinking. When*

42 Expert farms in the Province of Drenthe: *Bedreven Bedrijven Drenthe.*
43 Platform for New Agriculture: *Platform voor Nieuwe Landbouw (PMOV).*

you then compare your mineral balance with those of your colleagues it makes you think. These numbers challenge you to start experimenting and to start making some small changes. It takes quite a while before you are really into it. That is how it goes.

Farmer, communicated on 21-04-2006 in Beilen [44]

The study groups met six times a year and discussed economy, manure quality, soil fertility, meadow management, animal health, feeding practices, etc. All meetings were facilitated by project officials. The discussions were mainly based on farmers' knowledge but, if the farmers wanted, the facilitator could provide scientific knowledge (Gielen et al., 2006).

In their study groups, the farmers discovered a new way of feeding that kept cows healthier and upgraded the quality of their manure by reducing the nitrate emissions. The increased quality of the manure in turn contributed to healthier soil.

The grass becomes lazy and produces fewer roots when you provide it with too much nitrogen. Access to nitrogen is too easy. The plants do not have to work anymore.

Farmer, communicated on 21-04-2006 in Beilen[45]

Nitrogen uptake of the soil at these farms increased from 40% to 70%. This in turn reduced the nitrate surplus per hectare. [46] Therefore the farmers in the study groups were either exempted from the MINAS [47] tax or their taxes were reduced. Thus, farmers were able to meet the new environmental regulations while reducing costs and increasing returns.

Farmers for Nature

Last but not least, the project Farmers for Nature (see also Buizer, 2008) helped farmers to adapt their farm to the multi-functional landscape as envisioned in the National Landscape policy by incorpo-

44 Communicated during the final meeting in Beilen, 21 April 2006.

45 Communicated during the final meeting in Beilen, 21 April 2006.

46 This project was inspired by Vel-Vanla, a project in the Province of Friesland that has drawn national interest and involved farmers and scientists (Eshuis et al., 2001).

47 MINAS tax: The MINAS mineral accounting system is a policy instrument for limiting the loss of nutrients in agricultural land. It requires farmers to keep up-to-date accounts of minerals and to pay a charge if their mineral/nutrient surplus per hectare exceeds the established loss standard for phosphate and/or nitrogen.

rating nature conservation into their farming practices. Farming for Nature is an experiment undertaken by Alterra (a research institute) in four locations, one of them being the Amerdiep. The Amerdiep is one of the small streams that make up the Drentsche Aa system of streams (see Corporaal et al., 2003) and it is located within the National Landscape.

In this project, farmers whose lands had great nature value agreed to create a fund that represented the current market value of the 'nature land' on their farm. The interest earned on the fund was used to reward the farmer for maintaining this land. The interest became an inherent and inalienable part of the farm and was sold with the farm. The farmer retained space for entrepreneurship and the farmer's income was therefore not dependent on subsidies or other bureaucratic procedures. In the Amerdiep area, eight farmers participated in the project.

The Farmers for Nature project was initiated by the Plot Exchange Committee. The Plot Exchange Committee was confronted with a situation in the Amerdiep area (880 ha owned by 24 farmers) in which quite a lot of agricultural land was for sale. This land could not be bought by the State Forest Service (not even by means of plot exchange) because in the Regional Spatial Plan it had not been assigned the (future) status of nature land. Because of the low agricultural value of the plots, the agricultural land along the Amerdiep was not attractive for other farmers either.

> *A great deal of land has been offered in the Amerdiep for years and years: supply has outrun demand. This has caused us to reflect and determine whether or not we can do something else with the area, together.*
>
> Dairy farmer (Vredenheim), interviewed in NLTO and Alterra, 2005

The Plot Exchange Committee proposed to look for possibilities in which farming could be combined with nature. The Plot Exchange Committee took this idea to the Province of Drenthe. The Province of Drenthe (through the Deliberation Committee) agreed to take the Amerdiep as an experimental area. They asked Alterra to carry out research in the area and to design a farm model that could combine farming with nature. The condition was that the new type of farm still had to be profitable.

A number of farmers decided to take the risk and made the investments needed to adapt their farms to the 'production' of nature. They were prepared to buy the land which became available for a reasonable price.

> *In terms of business, farming in an extensive manner appeals to me... An integrated farm at this location offers me the best chance at a reasonable income.*
>
> Dairy farmer (Grolloo), interviewed in NLTO and Alterra, 2005

The other farmers were prepared to make room for nature development in the brook valley of the Amerdiep area.

> *If I can get a decent price, I would like to sell the remote fields and make room for nature. There is a market within the group for this.*
>
> Dairy farmer (Ekehaar), interviewed in NLTO and Alterra, 2005

When the project became a success, it was adopted by the Deliberation Committee:

> *A unique process has begun in the Amerdiep which we, as ambassadors, are happy to support. It is unique in the sense that we are looking for new possibilities here, opportunities which are present partially outside of the existing set of tools. It is above all unique because the farmers here take the lead and challenge government and other partners in the area to collaborate and redefine the limits of what was considered possible.*
>
> Chairman of the Deliberation Committee, interviewed on 6-12-2006 in Groningen

When the farmers decided to produce nature along the Amerdiep, the Regional Spatial Plan had not assigned it the (potential future) status of nature land. It had to be adapted to allow for the project. The chairman of the Deliberation Committee explains that, in this case, this was not seen as problematic.

> *Plans have to fit into the existing institutional boundaries. But if we want something and we run into these boundaries, then we consult with the Province about what to do about it. We have a clear vision and if people come up with great ideas for its implementation then existing policy should not be the problem.*
>
> Chairman of the Deliberation Committee, interviewed on 6-12-2006 in Groningen

So by presenting the Farmers for Nature project as an experiment that displayed opportunities for the implementation of the BIO Plan, a redefinition of the Regional Spatial Plan was easily legitimised. In the Farmers for Nature project, farmers' involvement resulted in an unintended re-negotiation of the spatial plan. This created room for the multi-functional activities that the local farmers themselves organised.

6.3.3 Currently

Actors from within the Drentsche area can apply to the Deliberation Committee for subsidies for projects. The Deliberation Committee has the decision-making power to decide whether or not the proposed projects contribute to the implementation of the BIO Plan. The Deliberation Committee wants the local actors themselves to be active and take responsibility. It sees its own role as helping to open doors that would otherwise have stayed closed. The creative solutions that exist at the local (field) level form and shape the specific implementation of the BIO Plan. According to its chairman:

> *Let's stop talking and start doing. We have nice plans but now we need people to generate projects. Come up with those ideas! We cannot change the world by just writing plans and visions. So we need people to formulate projects. I am a kind of director; I try to find those people.*
>
> Chairman of the Deliberation Committee, interviewed on 6-12-2006 in Groningen

The Deliberation Committee does not want to play first fiddle anymore. Instead, it wants to create conditions and provide the means for fulfilling them. The strategy of the Deliberation Committee seems to be working. By December 2007, five years after the establishment of the National Landscape, 85 projects had been proposed by local actors, approved by the Deliberation Committee and were being implemented.

6.4 Analysis

Let us now turn to the conceptualisation of this story with the help of the concepts discussed in the conceptual framework, namely, governance and the nature and role of experts and expertise.

6.4.1 Governance

With regard to governance, we stated that we wanted to study the involvement of the type and number of actors in the policy process in

order to get an idea of the kind of governance process with which we were dealing. In the Drentsche Aa area in the late 1990s and the early 21st century, we can observe a tension between, on the one hand, the top-down ambition to create a national park in the Drentsche Aa and, on the other hand, the new ideas concerning multi-actor governance and the ambitions to involve public and private actors in policy making. During the formulation of the BIO Plan, new non-traditional policy actors that had been excluded from the decision-making process in the past - such as the farmers' representatives - became involved in addition to the more traditional policy actors such as policy makers and State Forest Service experts. The explicit intention was to share responsibility for the policy process among all actors. The involvement of new policy actors suggests that the governance context changed towards an increasingly multi-actor governance setting. On the other hand, the dominant actors soon decided to take the existing policy as a framework for the negotiations. This defined the space for negotiation. In practice, the policy makers did not allow the opening up of policy goals. As a result, the formulation of policy goals remained the responsibility of traditional actors only, namely, policy makers and scientific experts (on a national or European level). This points towards hierarchical influences. All in all, we can conclude that the multi-actor platform functioned within the boundaries set by existing policy (hierarchical governance). The governance context at this time can thus be characterised as a hybrid multi-actor governance context.

This predominantly multi-actor governance context with hierarchical influences did not deliver the peace and harmony expected. The evolution of common values and understanding of what was at stake remained problematic. Nonetheless, individuals within the area began to network. They agreed on the need for a strategy that would by-pass the official platform. At a local level, platforms spontaneously emerged. So although the process was dominated by a formal negotiation platform, a need was felt to explore new ways of building relationships among stakeholders. More and more initiatives can be found of farmers who organised things themselves with other actors in the countryside, sharing similar problems or similar ideals, explicitly avoiding government involvement. They did not want to be dependent on subsidies or other bureaucratic procedures. Instead, they experimented and invested together, for example in collective meadow ownership and management. So all in all, we can conclude that the formal forms of participation (such as the multi-actor platform and the discussion and information evenings) had lost credibility with the local farmers; this resulted in the search for space for creative solutions outside the formal perspective.

6.4.2 Experts and expertise

Let us now turn to the nature and role of experts and expertise in this setting. With regard to the nature and role of experts and expertise, we stated that we wanted to study the number and type of cognitive communities, their boundary work strategies and their demarcation criteria. In the Drentsche Aa area in the late 1990s and early 21st century, we can observe various interests, legitimised by claims to expertise by, among others, traditional experts such as the Province and the State Forest Service, but also by new experts such as farmers or the BOKD. At the start we can distinguish at least four different cognitive communities in this setting. First of all, we can distinguish the cognitive community of the policy makers. In this community, the inner circle consisted of scientific experts involved in national and European policy. The outer circle consisted of the provincial policy makers who followed the national and European policy on both the reduction of intensive agriculture and nature conservation. Second of all, we can distinguish the cognitive community of the nature conservationists. This community consisted of an inner circle of University scientists and an outer circle of State Forest Service officials. This community is characterised by its belief in the ecohydrological theory of groundwater flows and plant communities. Third of all, we can distinguish a cognitive community of farmers. In this community, the inner circle consisted of experts on export markets, efficiency, competition, mechanisation and rationalisation. The outer circle consisted of the conventional Drentsche Aa farmers. This cognitive community is characterised by its belief in the power and inevitability of the agricultural treadmill. Fourth of all, we can distinguish the BOKD cognitive community. This cognitive community consisted of an inner circle of scientific experts with special knowledge of cultural history and an outer circle of BOKD followers. This cognitive community is characterised by expertise on cultural history.

Over time, the BOKD cognitive community and the policy makers cognitive community started to form a coalition. Together these cognitive communities became the dominant coalition. Policy makers adopted notions from cultural history because rhetorically these offered the possibility to pacify potential conflict. Before the formulation of the BIO Plan, the focus of regional (nature conservation) policy for the Drentsche Aa area had been on the conservation of the biodiversity-rich water meadows. The expertise of the BOKD allowed a broader definition, namely, one of landscape conservation, grounded in cultural history theory. This had the potential to accommodate the interests of both farmers and nature conservationists. Concepts such as conserva-

tion through renewal and identity of the landscape potentially allowed for new kinds of relationships because they were multi-interpretable. The participating farmers, for example, believed that the renewal part of conservation through renewal would help them secure the business interests of modern farming. The State Forest Service officials believed that the conservation part of conservation through renewal would help secure nature conservation interests. This is very much in line with expertise as accommodation.

The necessarily vague character of the boundary concepts led to frustration among farmers and nature conservationists, as the extent to which the dominant coalition would accept farmers' interests in relation to intensive agriculture was almost always kept vague. It was never made explicit whether the BIO Plan would offer room to conventional farming. This led to a great deal of frustration among the conventional farmers as they wanted to be certain that their interests would be taken into account. The farmers challenged the BIO Plan on the basis of their knowledge of professional intensive farming and their experience with the local and global market. When confronted with farmers' arguments, the nature conservationists engaged in boundary work to protect their interests. They invoked insights from a competing point of view, based on their ecohydrological knowledge. Boundary work involved stereotyping as both the nature conservationists and the farmers tried to gain direct influence on the formulation of the BIO Plan. Their sharply defined positions limited the space for compromise. Instead, the view advocated by the one was constantly blocked by the other by invoking insights from a competing view, resulting in a status quo. The farmers used demarcation criteria such as the nature conservation expertise being elitist and nature conservationists being untrustworthy. The nature conservationists used demarcation criteria such as the farmers being unprogressive. At a certain point, the platform became stalled in fruitless negotiations.

This boundary conflict between the nature conservationists and the farmers was mostly ignored by the dominant coalition. When it threatened to obstruct the process, the dominant coalition enforced its view. The vagueness of the concepts allowed them to claim that the interests of both the farmers and the nature conservationists had been taken into account in the policy outcome. In that sense, the situation in the late 1990s and early 21st century is not so different from the speaking-truth-to-power situation in the 1960s and 1970s. We can observe one dominant coalition of actors that held a monopoly on expertise. It was up to them how to incorporate the interests of other actors into their

views. This shows that indeed expertise as accommodation can be considered a sub-form of speaking truth to power.

In the 1990s, various practices of knowledge production and knowledge use existed side by side in the Drentsche Aa during the formulation of the BIO Plan. On the one hand, the multi-actor platform provided the context for new actors to participate in the policy process: traditional policy actors such as nature conservation experts and policy makers became just other actors among the number of private and public actors who joined the policy process. On the other hand, not all actors had equal influence on the outcome of the policy process: the BIO Plan was formulated within the framework of existing policy plans. New practices of knowledge production and knowledge use existed alongside more traditional processes of knowledge production and use. It seems that the assumption was that, far from being in opposition to one another, new practices of knowledge production and scientific expertise could comfortably be accommodated. In practice, however, we can observe a tension loaded with ideological disagreement and contradiction. In a different social and cultural setting, the outcome of the knowledge production process might have been completely different. What if the chairman had indicated from the start that there would be little room for intensive farming in future? Would the farmers still have participated in the formulation of the BIO Plan? Or what if the farmers' representative had been involved in multi-functional farming activities such as the Farmers for Nature initiative? Would there still have been a boundary conflict with the nature conservationists? And what if the multi-actor platform had been mediated by a facilitator with an understanding of the history of relationships in the area, an understanding of the mutual labelling and stereotyping and a mandate to deal with the conditions arising from policy incoherence (such as contradictory subsidy systems in which farmers were paid for intensifying agriculture and conservationists were paid for keeping the meadows nutrient free)? If there had been a feedback loop from the chairman to the ministry about the way that these policy incoherencies manifested themselves in practice then perhaps the conflict between the nature conservationists and the farmers would not have been so intense. Probably the outcome would have been different somehow, but it is impossible to say how different, or whether it would have led to a substantially less problematic process.

6.5 Conclusion

What emerges here is a story of the nomination of the Drentsche Aa area as a National Landscape. It was felt that a hierarchical National Park nomination would deliver few results; therefore an experiment with multi-actor negotiation on a regional scale was set up, under the authority of the elected provincial government. The goals of biodiversity protection in the Drentsche Aa area had become contested and had therefore became political. This goal contestation greatly increased complexity. A multi-actor process was intended to open up the negotiation with regard to setting the goals and the methods for reaching these goals. So what happened?

All in all, we can conclude that the governance context at this time can be characterised as a predominantly multi-actor governance context with hierarchical influences. The policy process involved non-traditional policy actors - such as NGOs and private parties - in addition to traditional policy actors such as policy makers and scientific experts. The explicit intention was to share responsibility for determining the means of policy (knowledge) and the ultimate ends to be achieved (the policy goals) among all actors. However, in practice the policy makers could not allow the opening up of the policy goals. So, despite the multi-actor governance ambition, the policy problem and the policy goals were defined by the dominant coalition on the basis of traditional scientific expertise and therefore excluded other types of expertise. Policy makers adopted notions from cultural history in regional policy because rhetorically these offered the possibility to pacify potential conflict by accommodating the interests of other actors. The nature and role of experts and expertise in this setting can be characterised as expertise as accommodation.

However, the necessarily vague character of the boundary concepts led to frustration among farmers and nature conservationists, as the extent to which the dominant coalition would accept farmers' interests in relation to intensive agriculture were almost always kept vague. The farmers responded by challenging the goals as defined by the dominant coalition. When confronted with farmers' arguments, the nature conservationists felt threatened and engaged in boundary work to protect their own interests. The conflict was not so much about the truth of the knowledge claims but rather about the interests that were incorporated in these knowledge claims. Because of the disagreement on goals, the negotiations were more about interests than about truthfulness of knowledge claims. There was no real knowledge debate and

neither were knowledge claims a simple input into decision-making processes. Boundary work involved stereotyping. The demarcation criteria involved issues such as untrustworthiness, elitism and unprogressiveness. In terms of the nature and role of experts and expertise, the situation resembles expertise as ammunition.

Initially, the dominant coalition ignored both the farmers' challenges and the boundary conflict between the farmers and the nature conservationists, but when it threatened to stall the process they enforced their own formal perspective. The vagueness of the concepts allowed them to claim that the interests of both the farmers and the nature conservationists had been taken into account in the policy outcome. So what finally determined the outcome of the decision-making process was a difference in power. Although the multi-actor platform provided the context for new actors to participate in the knowledge production process, not all actors had equal influence on the outcome. The policy goals and the policy problem had been defined by the dominant coalition on the basis of traditional scientific expertise and therefore excluded other types of expertise. Boundary work can be characterised as ideological self-description. Demarcation criteria included traditional criteria such as the theoretical nature of concepts, but other criteria were also considered important, such as the extent to which theories or concepts could offer compromise or pacification. In terms of the nature and role of experts and expertise, this situation can be characterised as speaking truth to power.

7

Conclusions and discussion

'De waarheid is alleen maar nuttig voor de wetenschap; de rest van de wereld doet het altijd zonder.' (Tom Poes) [48]

Toonder, 1990

This study started out with optimistic expectations about multi-actor settings and co-production of knowledge that would be able to solve complex problems. Indeed multiple actors started negotiation procedures, but no co-production of knowledge occurred on the platform to solve the problem. We wanted to know how we could understand this situation. Chapters 4, 5 and 6 presented the findings about developments in nature conservation in the Drentsche Aa area. In Chapter 7, we wrap up the main findings of our study in section 7.1 and draw some conclusions in section 7.2 by systematically answering our research questions. After that, in section 7.3 we discuss the scientific contribution of our research in terms of how it relates to other scientific findings in the domains of policy sciences, science and technology studies, and communication studies.

7.1 Wrapping up the findings

7.1.1 Governance

With regard to governance, we stated that we wanted to study the involvement of the type and number of actors in order to ascertain the kinds of governance processes with which we were dealing.

48 *'Only science is concerned with truth; the rest of world always manages to do without it.'* (Tom Poes) - (Toonder, 1990)

The 1960s and 1970s

In the Drentsche Aa area in the 1960s and 1970s, we can observe that, in the formulation of the *Gedachtenplan* and the related decision making, the State Forest Service, the RIVON scientists, the Ministry of OKW and the Provisional Council played an important role. The *Gedachtenplan* was developed at the provincial level by the State Forest Service and then submitted to the ministry. Decision-making power rested with the ministry. The actors involved were all traditional governmental policy actors or scientific experts. The scientific experts provided the input and the governmental policy actors had the decision-making power. Thus, governance in this context can be interpreted as a predominantly hierarchical. However, at the same time it is interesting to note that there was concern about public support: the State Forest Service officials had to show that their nature conservation plan was relevant for society in terms of recreation and tourism. This concern about public support points towards some multi-actor governance influences, but the way in which the concern about public support was addressed was very much in line with the previously established hierarchical approach. The State Forest Service officials formulated and implemented policy by means of which they protected the interests of tourists, without the involvement of tourists themselves or tourist representatives. Farmers were excluded from the formulation and decision-making process even though they would have wanted to have been included and neither were their interests represented in the decision-making process.

The implementation of the *Gedachtenplan* involved negotiations between nature conservationists and farmers. However, the state still had a lot of influence on the outcome of these negotiations. It made additional funds available for the land to be purchased by the State Forest Service for more than the market price. The higher price proved a real incentive, and this made it relatively easy for the State Forest Service to acquire the lands along the streams. The formulation and implementation of the *Gedachtenplan* was approached as if there was consensus on the goal (protection of biodiversity) as well as on the knowledge for reaching this goal. Despite the concern about public support, the decision-making process was first and foremost a top-down process in which decisions were made by policy makers. We can interpret this as a hierarchical governance context with multi-actor governance influences.

The 1980s and early 1990s

Most of the nature reserve was established in the 1980s and early

1990s. This is when the management of the nature reserve became a major issue. This period is characterised by controversy over claims to appropriate ecological-scientific knowledge to manage nature. The problem of protecting biodiversity in the Drentsche Aa area could no longer be approached as a straightforward, uncomplicated problem. There was still consensus on the goal (protection of biodiversity), but there was no consensus on the knowledge required to reach this goal (closing of deep ditches). This controversy mainly involved nature conservation experts; the national and provincial policy makers distanced themselves from it. This scenario would fit a predominantly hierarchical approach to governance in which science and policy are seen as different domains, the former concerned with practices of knowledge production and the latter concerned with practices of knowledge use.

The late 1990s and early 21st century

If we compare this situation to that prevailing in the late 1990s and early 21st century, we can observe in the latter period considerable changes in the number of actors as well as in the type of actors involved. During the formulation of the BIO Plan, new non-traditional policy actors who had been excluded from the decision-making process in the past - such as the BOKD representatives and farmers' representatives - became involved alongside the more traditional policy actors such as policy makers and State Forest Service experts. These actors all had their own goals and interests, and therefore it became clear that the goal of biodiversity protection in the Drentsche Aa area was contested and political. This contestation greatly increased the perception of complexity. The involvement of new policy actors suggests that the governance context changed towards an increasingly multi-actor governance setting. However, when we look carefully at this situation, not all actors had equal influence on the outcome of the process. Despite the multi-actor governance setting, the policy goals were still determined by traditional policy actors. They took the existing policy as a framework for the negotiations, thereby restricting their scope. Actors whose views were more in line with the existing policy, such as the BOKD or the State Forest Service, were able to benefit more from the formulation of the BIO Plan. This suggests that the multi-actor governance context was still quite hierarchical. This is confirmed when we look at the information and discussion evenings. The organisation of these evenings was based on the assumption that, if local farmers were well informed, they would understand and appreciate the BIO Plan as well as the National Landscape. Although the information and discussion evenings may have been intended to give local farmers actual influence on the outcome of the policy process,

in practice it did not work out that way. In response, local farmers decided to by-pass the formal platform and organise things themselves. As the formal multi-actor platform could not deliver the solution to the problems that they were experiencing, they explicitly avoided the multi-actor platform. Through self-organisation, they created space alongside it to define their own problems, goals and the knowledge required to reach those goals. This allowed them to invest jointly in creative solutions to solve their problems. So, in summary, a formal multi-actor negotiation process was created to involve non-traditional policy actors in the policy process, but, because of dissatisfaction with the formal multi-actor negotiation platform, processes of self-organisation, in which the non-traditional policy actors decided to create their own space for change, occurred outside the formal platform.

Shift in governance
In summary, the governance context shifted from a predominantly hierarchical context with multi-actor influences to a predominantly multi-actor context with hierarchical influences. In the latter situation, processes of self-organisation emerged when the formal multi-actor negotiation processes lost credibility with local actors; this self-organisation resulted in space for change.

7.1.2 Experts and expertise
With regard to the nature and role of experts and expertise, we stated that we would study the number and type of cognitive communities, their boundary work strategies and their demarcation criteria.

The 1960s and 1970s
In the 1960s, State Forest Service experts together with the RIVON scientists claimed nature conservation expertise (the gradient theory). We can observe a clear and uncontested layered system of expertise in which the RIVON scientists formed the inner circle of leading experts, with the State Forest Service officials forming an outer circle of followers. Boundary work took the form of ideological self-description. When the State Forest Service officials were asked by high ranking officials to develop a nature conservation plan for the Drentsche Aa area, they turned to the RIVON scientists for theoretical underpinning of their plan. This legitimised the State Forest Service officials' nature conservation plan vis-à-vis the ministry.

When during the implementation phase of the *Gedachtenplan* the State Forest Service started buying agricultural plots and had to manage these plots according to traditional farming practices, they

used traditional farmers' knowledge as implementation knowledge. The State Forest Service claimed the traditional farmers' knowledge as their own nature implementation expertise and re-drew the boundary between local farmers' knowledge and nature conservation expertise, but without redefining the coalitions that went with this boundary. This was possible because farmers themselves had moved beyond traditional farming practices and were now claiming expertise in modern farming practices.

In this period, knowledge production was the domain of the gradient theory cognitive community. This cognitive community had monopolised the claim to nature conservation expertise. As they did not have to engage in boundary work with other cognitive communities, they alone, without entering into debate with anyone else, were able to determine what constituted nature conservation expertise. Boundary work involved mainly ideological self-description. Demarcation criteria used included traditional scientific criteria such as expertise being theoretical. We can conclude that in this period the nature and role of experts and expertise took the form of speaking truth to power.

The 1980s and early 1990s

In the 1980s and early 1990s there were two cognitive communities that claimed nature conservation expertise. First of all, the regional State Forest Service officials and the RIN scientists formed a cognitive community in which the regional State Forest Service officials could be considered the followers (outer circle) and the RIN scientists could be considered the cognitive leaders (inner circle). The expertise of this cognitive community concerned gradient theory and its application in nature management. Second of all, the University scientists and the national State Forest Service experts formed a cognitive community in which the national State Forest Service officials can be considered the followers (outer circle) and the University scientists can be considered the leaders (inner circle). The expertise of this cognitive community consisted of ecohydrological theory about groundwater flows and plant communities in the water meadows. In the 1970s, the University scientists started to develop their own scientific community by contrasting their scientific practices with those of the RIVON cognitive community. In the Drentsche Aa area, this led to a scientific controversy at the beginning of the 1980s in which the ecohydrological theory cognitive community and the gradient theory cognitive community vied for authority and reputation in relation to expertise on the management of the Drentsche Aa area. During this scientific controversy, the cognitive communities used stereotyping as a boundary work

strategy. They characterised themselves as belonging to the group that had found the undisputable objective truth. The members of the other cognitive community were seen to belong to the group who had missed the truth (and thus belonged to 'them'). The gradient theory cognitive community claimed its expertise was better because it was holistic and more applicable in practice. The ecohydrological cognitive community claimed its expertise was better because it was factual, objective and grounded in experimental methodology. The conflict was won by the University scientists who were subsequently able to claim an expert identity for themselves and their knowledge. Nature conservation expertise now involved the ecohydrological theory of groundwater flows and plant communities.

The knowledge production process involved two cognitive communities with conflicting views on expertise. Disciplinary boundaries were not respected and therefore boundary work strategies took the form of stereotyping. Demarcation criteria included traditional criteria such as expertise being unfalsifiable, untestable, inapplicable and reductionist. We can interpret the nature and role of experts and expertise in this setting as expertise as ammunition.

The late 1990s and early 21st century

In the late 1990s and early 21st century, we can observe various interests, legitimised by claims to expertise, in the Drentsche Aa area. These included traditional experts such as the State Forest Service but also new experts such as farmers or the BOKD. At the start we can distinguish at least four different cognitive communities in this setting, all representing different interests. First of all, we can distinguish the cognitive community of the policy makers. In this community, the inner circle consisted of scientific experts involved in national and European policy. The outer circle consisted of the provincial policy makers who followed national and European policy on the reduction of intensive agriculture and on nature conservation. Second of all, we can distinguish the cognitive community of the nature conservationists. This community consisted of an inner circle of University scientists and an outer circle of State Forest Service officials. This community is characterised by its expertise on ecohydrological theory about groundwater flows and plant communities. Third of all, we can distinguish the cognitive community of the farmers. In this community, the inner circle consisted of experts on markets, efficiency, competition, mechanisation and rationalisation. The outer circle consisted of the conventional Drentsche Aa farmers. This cognitive community is characterised by its belief in the power and inevitability of the agricultural

treadmill. Fourth of all, we can distinguish the cognitive community of the BOKD. This cognitive community consisted of an inner circle of scientific experts with expertise on cultural history and an outer circle of BOKD followers. This cognitive community is characterised by its expertise on cultural history. Over time, the BOKD cognitive community and the policy makers' cognitive community started to form a coalition. Together, these cognitive communities became the dominant coalition with a monopoly with regard to expertise. Policy makers adopted notions from cultural history in regional policy because rhetorically these aimed at more successful boundary work strategies in terms of accommodation. Cultural history as a boundary concept had the potential to bridge the gap between the farmers' view and the State Forest Services' view. Concepts such as conservation through renewal and identity of the landscape potentially allowed for new kinds of relationships because they were multi-interpretable. As a consequence, the form of nature conservation expertise also changed. Before the formulation of the BIO Plan, the focus of nature conservation expertise in policy had mainly been on the conservation of plant communities and biodiversity. During the formulation of the BIO Plan, due to the influence of the BOKD, biodiversity was no longer the central issue; instead, a landscape approach grounded in cultural history was taken. The implicit assumption of the dominant coalition was that the problem and the goals were uncontested. The means and methods needed to reach the goals were entrusted to communities of scientific experts who had informed their expertise and not to the other actors on the platform. In terms of the nature and role of experts and expertise, the situation resembles speaking truth to power. Demarcation criteria included traditional criteria such as the theoretical nature of concepts, but other criteria were also considered important, such as the extent to which theories or concepts could offer compromise or pacification.

The necessarily vague character of the boundary concepts led to frustration, as the extent to which the dominant coalition would accept farmers' interests and nature conservation interests was almost always kept vague. During the formulation of the BIO Plan, farmers challenged it. When confronted with farmers' arguments, the nature conservationists engaged in boundary work to protect their interests. Boundary work involved stereotyping as both the nature conservationists and the farmers tried to gain direct influence on the formulation of the BIO Plan. The farmers used demarcation criteria such as the nature conservation expertise being elitist and nature conservationists being untrustworthy. The nature conservationists used demarcation

criteria such as the farmers being unprogressive. In terms of the nature and role of experts and expertise, the situation resembles expertise as ammunition. What finally determined the outcome of the decision-making process was a difference in power. Initially, the dominant coalition ignored both the farmers challenges and the boundary conflict between the farmers and the nature conservationists, but when these issues threatened to stall the process they enforced their own formal perspective. The boundary concepts allowed them to claim that both views had been taken into account in policy.

The knowledge production process involved multiple cognitive communities, one of which can be characterised as a dominant coalition of actors. The boundary work strategy of the dominant coalition can be characterised as ideological self-description. Demarcation criteria included traditional criteria such as the theoretical nature of concepts, but other criteria were also considered important, such as the extent to which theories or concepts could offer compromise or pacification. In terms of the nature and role of experts and expertise, this situation can be characterised as speaking truth to power. The interaction among less powerful cognitive communities can be characterised as expertise as ammunition. It involved the boundary work strategy of stereotyping. Demarcation criteria involved untrustworthiness, elitism and unprogressiveness.

Shift in nature and role of experts and expertise
In summary, over time the nature and role of experts and expertise shifted from speaking truth to power, to expertise as ammunition and, last but not least, to speaking truth to power with expertise-as-ammunition influences.

7.2 Conclusion

On the basis of this historical overview, we can now answer our research questions. We first answer our sub-questions. After that, we answer the overarching central research question.

Sub-question 1: How did the governance context change over time?
We can conclude that in the Drentsche Aa area the governance context changed from a hierarchical context with multi-actor influences to a multi-actor governance context with hierarchical influences.

In the 1960s, 1970s, 1980s and early 1990s, the governance context can be characterised as predominantly hierarchical with multi-actor influences. The policy process involved only traditional policy actors. Policy makers and scientific experts could unilaterally define problems, aims and knowledge. Policy makers could make decisions and have them implemented. The means of policy (that is, knowledge) and the ultimate ends to be achieved (that is, the policy goals) were determined by central government. However, the interests of some non-traditional actors (tourists) were also taken into account. This points towards some multi-actor governance influences.

In the late 1990s and early 21st century, the governance context can be characterised as predominantly multi-actor with hierarchical influences. The policy process involved non-traditional policy actors - such as NGOs and private parties - in addition to traditional policy actors such as policy makers and scientific experts. The explicit intention was to share responsibility for determining the means of policy (that is, knowledge) and the ultimate ends to be achieved (that is, the policy goals) among all actors. However, in practice the policy makers did not allow the opening up of the policy goals. This means that the formulation of the policy goals included traditional actors only, namely, policy makers and scientific experts. This points towards hierarchical influences. Because of dissatisfaction with these hierarchical influences, local actors engaged in processes of self-organisation outside the formal policy arena.

Sub-question 2: How did the nature and role of experts and expertise change over time?
We can conclude that the nature and role of experts and expertise shifted from speaking truth to power, to expertise as ammunition and, last but not least, to speaking truth to power with expertise-as-ammunition influences.

In the 1960s and 1970s, the nature and role of experts and expertise took the form of speaking truth to power. In this situation, one scientific cognitive community had an uncontested claim to expertise. Boundary work strategies took the form of ideological self-description. Demarcation criteria only included traditional criteria such as expertise being theoretical and objective.

In the 1980s and early 1990s, the nature and role of experts and expertise took the form of expertise as ammunition. In this situation, two cognitive communities made contested claims to expertise. Disci-

plinary boundaries were not respected, and this led to boundary work strategies of stereotyping. Demarcation criteria still only included traditional criteria such as expertise being unfalsifiable, untestable, inapplicable and reductionist.

In the late 1990s and early 21st century, the nature and role of experts and expertise took a speaking-truth-to-power form with expertise-as-ammunition influences. In this situation, we can observe multiple cognitive communities in interaction with each other, one of which can be characterised as a dominant coalition of actors. The boundary work strategy of the dominant coalition can be characterised as ideological self-description. Demarcation criteria include traditional criteria such as the theoretical nature of concepts but also accommodation criteria such as the extent to which theories or concepts could offer compromise or pacification. In terms of the nature and role of experts and expertise, this situation can be characterised as speaking truth to power. The interaction among less powerful cognitive communities can be characterised as expertise as ammunition. It involved the boundary work strategy of stereotyping. Demarcation criteria involved untrustworthiness, elitism and unprogressiveness.

Main research question: How can the role and shape of experts and expertise in different governance contexts and their possible changes over time be understood?

We can conclude that the shift in governance was accompanied by a shift in the nature and role of experts and expertise. The shifts both resulted in hybrids:

1. In the predominantly hierarchical context with multi-actor influences of the 1960s and 1970s, the nature and role of experts and expertise took the form of speaking truth to power
2. In the predominantly hierarchical context with multi-actor influences of the 1980s and early 1990s, the nature and role of experts and expertise took the form of expertise as ammunition
3. In the predominantly multi-actor governance context with hierarchical influences of the late 1990s and early 21st century, the nature and role of experts and expertise took the form of speaking truth to power (the dominant coalition of actors) with expertise-as-ammunition influences (the other cognitive communities).

We can conclude that the explicit multi-actor governance ambition did not result in a clear transition from an old hierarchical governance context with a speaking-truth-to-power role for experts and expertise, to a new multi-actor governance context in which multiple actors

are engaged in co-production-of-knowledge processes. Instead, we observed contexts in which various governance practices as well as natures and roles of experts and expertise existed side by side. The shift in governance and in the role and nature of experts and expertise both resulted in hybrids. The specific hybrids that we encountered in this research are the outcome of a power difference, leading to inclusion of some and exclusion of others from the formal perspective of the dominant coalition, and therefore leading to speaking truth to power with expertise-as-ammunition influences instead of co-production of knowledge.

7.3 Discussion

Recent literature on governance, participation and expertise supports our conclusions. Boonstra (2004) and Van der Zouwen (2006) show that shifts in governance are not always perfect. Boonstra (2004) shows that interactive policy-making initiatives in three areas in the Netherlands had to function within boundaries set by policy frameworks. She reveals that the regional and local initiatives did not always correspond well with the existing frameworks. Van der Zouwen (2006), in her study of the Yorkshire Dales, Doñana and the Veluwe, shows that, despite involvement of non-governmental actors in policy processes, the policy processes are often still dominated by governmental actors. They determine not only who takes part in the policy process and who does not, but also what is done with participants' input. In the Drentsche Aa, we have seen similar processes.

Cooke and Kothari (2001) criticise participation practices designed to encourage the incorporation and represention of local actors: they give them a voice, but only within highly orchestrated processes where real choice between - and power over - policy outcomes are strictly limited (see also Nederlof and Odonkor, 2006; Sherwood, forthcoming). Although giving the impression of involving local actors and previously excluded groups, participation often simply becomes another means of pursuing traditional top-down agendas (Parfitt, 2004). So, participation then not only restricts the scope of genuine involvement, but also places responsibility for the success (or otherwise) of policy squarely on the shoulders of the beneficiaries (Williams et al., 2003). Participation thus becomes a mechanism for efficiency of service delivery or for continuing maintenance (Kabeer, 1996) that reduces state responsibility (O'Reilly, 2006). All these authors argue that, rather than involving actors at the local level, participation often simply provides alternative

methods for incorporating local actors into the projects of the powerful who remain essentially unaccountable to those they are supposed to serve. Top-down power relations tend to be preserved beneath a participatory surface. Indeed, in the Drentsche Aa area, the multi-stakeholder platforms achieved little more than reproducing the existing policy frameworks. Shifts in power relations and empowerment of the local inhabitants were not achieved. Instead, the process contributed to the reinforcement of already powerful interests. Outside the platforms, meaningful participation was only possible for farmers who had the guts to defend their interests and who were creative enough to work within and around the existing frameworks and submit their own ideas and projects.

Multi-actor governance and participation are based on the idea that new societal actors can contribute their knowledge to complement scientific knowledge and in the end create a better plan. This is based on the assumption that interdependence between stakeholders leads to incipient realisation among them that they must come to co-production of knowledge if anyone is to have satisfactory outcomes. After all, interdependence means that one can only reach one's goals on condition that others reach theirs. In the Drentsche Aa, we have seen that this co-production-of-knowledge process did not occur as such. This is supported by a number of science and technology studies researchers studying the relations between science and society. They illustrate the difficulties associated with widening (technical) decision making beyond the core of scientific experts. For example, Turnhout et al. (2007) in their discussion of ecological indicators show that, even though indicator development is demand driven, interdisciplinary, uncertain and value laden, scientific knowledge is still dominant, and stakeholder participation is a rare exception. Another example is provided by Kerr (2003, p. 220) who has considered changes in the 'new genetics' and concludes that 'it would (...) be naive to assume that (...) present relationships between professionals, patients, publics and genetic diseases are fundamentally different from those of the past'. More generally, Jasanoff (2003, p. 162) argues that 'some of the odd twists and turns we observe in the contemporary politics of expertise flow from a refusal to think systematically or theoretically about the changing role of experts and expertise in our legal and administrative systems. Too often still, experts are seen as individuals possessing special skills or superior knowledge applicable to predetermined domains of decision making; the experts' political power to define the issues and select the very terms of deliberation has received too little notice.' Irwin (2006, p. 299), when discussing the relationship between new and old ap-

proaches to scientific governance, states: 'rather than witnessing the emergence of a new governance paradigm, the current approach can more accurately be portrayed as an uneasy blend of 'old' and 'new' assumptions... Many familiar challenges of science-society relations remain in place with the 'new' approach to public policymaking. Not least among these is the status to be granted expert knowledge within more open engagement processes.' Hisschemöller (2004, p. 199) adds that 'current democracy lacks the institutions to facilitate participation as knowledge production'. The implication is that the power and dominance of scientific knowledge have not disappeared just because other types of knowledge have entered the political process. Scientific experts and expertise remain dominant because they are included in the formal perspective, whereas other experts and other types of expertise are excluded. This leads to a difference in power among experts and expertise which includes some and excludes others. This closes down possibilities for negotiation and co-production of knowledge.

This research distinguishes itself from existing literature by shedding light on the actual nature and role of experts and expertise in different governance contexts. In two ways it is a considerable theoretical innovation as compared to other research on governance, experts and expertise so far.

First of all, in the existing literature shifts in governance and the nature and role of experts and expertise are often described as a paradigm shift from hierarchical governance to multi-actor governance (Powell, 1994), from science to trans-science (Weinberg, 1972), from an expertocracy to democratisation of science (Beck, 1994, 1995), from normal science to post-normal science (Funtowicz and Ravetz, 1993; Ravetz, 1999) or from a mode 1 science to a mode 2 science (Gibbons et al., 1994). So far, scientists have responded by carrying out research on shifts in governance. There was still a gap in scientific knowledge in the area of the political nature and role of experts and expertise in the content of policy making. This PhD thesis squarely addresses this gap in knowledge by elucidating the nature and role of experts and expertise in different governance contexts. This research has led to the insight that co-production of knowledge is an ideal type that can reflect people's intentions but that will never occur as such in practice. It shows that the intentions of co-production of knowledge should not be confused with the actual practices. The notion of ideal types was developed by Weber (1949) who insisted that they are not descriptions of objects existing in the real world. They are, rather, instruments which the social scientist creates for purposes of investigating the so-

cial world. For Weber, ideal types are thus merely instruments. Weber was always fully aware that ideal types are human constructs which represent human attempts to conceive reality but do not necessarily represent reality itself (Lemaire, 1976). Ideal types describe a general class that has been deliberately perfected and purified for intellectual purposes. They are guided by the values we posit, and therefore remain partial and limited. This does not mean that they are not valuable. Weber admitted that employing ideal types was an abstraction but claimed it was nonetheless essential if one was to understand any particular social phenomena. As long as we do not confuse ideal types with empirical reality, they are valuable interpretative devices for making sense of social reality (Lemaire, 1976). This insight is a considerable innovation as compared to the work of other authors.

Second of all, this research shows that the relationship between the shift in governance and the shift in the nature and role of experts and expertise is not as straightforward and unambiguous as sometimes thought. In the literature, this relationship is sometimes described in a clear-cut way (see for example Hoppe, 2005; Turnhout et al., 2007, 2008). Modes of governance and policy strategies are conceptualised as being related to the nature and role of experts and expertise on a one-to-one basis. This research has shown that indeed shifts in governance are accompanied by shifts in the nature and role of experts and expertise but that this relationship is complex and ambiguous. The relationship between the two shifts turned out to be the outcome of power struggles over cognitive and political authority leading to inclusion of some and exclusion of others. Therefore, in this research, multi-actor governance intentions relate to speaking truth to power and expertise as ammunition rather than to co-production of knowledge.

In addition to being theoretically innovative, this research is methodologically innovative in combining an interpretative policy analysis with a narrative turn in research methodology. Ethnographers have long been recommending story writing to help readers understand and critically evaluate an account (Geertz, 1988). In policy analysis it is still relatively rare to find narrative ways of reporting. In this research, we have argued that an interpretative policy analysis can benefit from a narrative way of reporting. We feel that the credibility of an interpretative policy analysis can be greatly enhanced by telling a rich, grounded and persuasive story that invites the reader to reflect on his/

her own experiences and expectations. Following Flyvbjerg's [49] ideas on a narrative turn in research methodology, we have presented a way in which such a story can be constructed. In the body of the thesis we have demonstrated the result of such a construction: an unfolding plot about particular people and specific events (plot 1) and a conceptual plot (plot 2) about concepts and theory. Finally, plot 1 and plot 2 were woven together and the story continuously switched from plot 1 to plot 2 and back to plot 1. This resulted in a rich story characterised by a pragmatically governed interpretation of experts and expertise in different governance contexts. In its telling, the story became, itself, a source of meaning. The experimentation with stories and narratives as conveyers of meaning represents the methodological contribution of this research.

49 Communicated during the course 'Narrative turn in research methodology', Aalborg, November 2006.

8

Reflection

'Iemand die álles weet wat er te weten is, heeft veel kennis', vervolgde Professor Sickbock, 'die schik in het onderwerp begon te krijgen. Maar waarom zou hij alles willen weten? Kennis zonder doelstelling is eigenlijk niet-kennis. Kunt ge me volgen?' [50]

Toonder, 1968

8.1 Revisiting our initial surprise

In order to contemplate on the conclusions reached in Chapter 7, we need to go back to our initial surprise (Chapter 1) and try to make sense of the partial shifts in governance, experts and expertise.

8.1.1 A problematic hybrid

The literature shows that multi-actor governance always occurs in a hybrid form, but these hybrids do not have to be problematic. There are always certain policy frameworks within which multi-actor governance takes place. Multi-actor governance does not imply that everything should be open for negotiation and nothing can be fixed any more. Sherry Arnstein, writing in 1969 about citizen involvement in planning processes in the United States, described a ladder of participation with eight steps starting at the bottom with manipulation and ending at the top with citizen control. Participation may work best for all concerned when each of the key interests - the stakeholders - is satisfied with the level of participation at which they are involved. That is, those who do not have much at stake may be happy to be informed

50 *'Starting to enjoy the subject', Professor Sickbock continued, 'someone who knows all there is to know has a lot of knowledge. But why would he want to know everything? Knowledge without purpose is really non-knowledge, you see?'-* (Toonder, 1968)

or consulted. Others will want to be involved in decisions and possibly also in implementation. In areas where the government is held accountable and responsible by citizens, delegating influence and decision-making power does not work well. Conversely, where citizens do not want to bear final responsibility for policy, they should not have a final say (Aarts, 2007). So some people will want - or demand - more involvement than others. Others will wish not to be involved. According to Aarts (2007), the various different models for governmental interaction with citizens should all be valued. Limited participation in multi-actor governance contexts is not necessarily problematic. So the hybrid form that multi-actor governance takes in the Drentsche Aa area in itself cannot explain its problematic character. So what can?

In the Drentsche Aa area, the hybrid multi-actor context was problematic because the level of participation at which stakeholders were involved was not clear. Some actors had the idea that they were invited to an open dialogue and negotiation process with regard to the desired outcome. As it turned out, the desired outcome was largely government determined. From the particular concern with existing policy to the formulation of legitimate questions and to the rigid timetable, this multi-actor governance initiative was conducted from a hierarchical perspective. This inconsistency created expectations that subsequently could not be met. Actors had mixed feelings about the process. They thought that they had been invited to a process in which everything was open for negotiation, but the negotiations started on the basis of more or less fixed goals. In this distributive negotiation (Aarts and Van Woerkum, 2002), they held onto their goals as much as possible because they felt a compromise would mean something had to be given up. Actors complained about the tendency of the provincial authorities to dominate the multi-actor negotiation processes. The room for negotiation was perceived as too restricted and the suspicion arose that the negotiations could be - or were - manipulated in the interests of the already powerful. So the Drentsche Aa multi-actor hybrid was problematic because the room for negotiation was unclear: farmers thought that they had more room for negotiation than they actually had in practice. In addition, they were not satisfied with the negotiating space that they had been given. They did not agree with the goals that had already been set. In the end, the government just imposed its framework, making it clear that multi-actor governance did not mean that unequal power relations between the actors had disappeared. Because of the power differences between the actors in the Drentsche Aa, the trade-offs among interests and perspectives were not negotiated but imposed. Diverging views were

held together by exerting pressure on the actors to compromise and move towards joint action.

This clearly shows the tension between the intention of multi-actor governance and the space for negotiation that could subsequently be offered. Although non-traditional policy actors were involved in a multi-actor setting to legitimise the policy outcome (public support), the process in this setting was designed to reproduce the dominant formal perspective (legitimised by scientific expertise) rather than to lead to an open dialogue and negotiation process with regard to the desired outcome. The call for involvement and dialogue in the multi-actor policy processes sat very awkwardly with a dominant policy framework: what room can there be for dialogue when the direction is already set?

8.1.2 Reduction of complexity

The tendency to reproduce the dominant formal perspective can be understood with the help of the concept of autopoiesis. Autopoiesis was first formulated by Chilean biologists Maturana and Varela in the 1980s to describe how a living system is able to produce and reproduce its own system (see Maturana and Varela, 1987). Morgan (1998) applied it to organisations and argued that not only living systems, but organisations too, tend to be self-referential or autopoietic. The usual organisation science perspective that an organisation adapts to its environment, or is at least influenced by it, is fundamentally turned around. An autopoietic organisation, on the contrary, only perceives its environment as a projection of its self-identity. The theory of autopoiesis accepts that systems have environments but insists that the perception of the environment is always a construct. Autopoiesis suggests that the way we see and manage our environment is ultimately a product of how we see and think about ourselves and consequently how we enact relationships with the environment. Organisations will always enact their environments as extensions of their own identity (Kickert, 1993). Wagemans (2002) applied this theory to interactive policy making, and he concluded that, even in an interactive setting, the formal policy perspective tends to reproduce itself. He states that in interactive policy making, problems, opportunities and solutions are only relevant in so far as they fit within the formal perspective. Indeed, in the Drentsche Aa area, it was still the policy makers who defined the problem, including the direction for solutions. The dominance of the policy makers and the subsequent reproduction of the formal perspective on the regional level then determined what was up for negotiation and what not.

8.1.3 Management of this reduced complexity

Self-reference can be seen as a strategy to reduce complexity and achieve order in what seems to be a disorderly world. Policy makers in self-referential systems prefer to approach problems as if the government were in control, i.e., in a position, and with access to resources, to solve the problem. This means that the policy makers determine what the goal is and know to a certain extent what the solution to the problem looks like (Termeer, 2004). Hoppe (2002) states that in such a case policy makers will consider every problem 'structured' until proven otherwise. Because they can only deal comfortably with problems whose goals are not openly contested, and because they are used to imposing their values on others, they will ignore rival values and goals. Instead, they will implicitly impose their own values, or, if this cannot be done, they will avoid dealing with such problems or problem parts. They will only reluctantly deal with problems for which the knowledge base for problem solving is either insufficient or contested. Ashmos et al. (2000) also argue that complexity is often reduced by minimising the number of goals and strategic activities to be considered and by formalising decision-making patterns. This minimises uncertainty, limits the need for search activities and constricts the range of possible solutions.

In the Drentsche Aa, on the multi-actor platform, it was quite a challenge to keep control of the problem because policy makers were confronted with other actors who had different goals and interests and therefore did not accept the range of possible solutions as defined by the policy makers. These actors had to be directed and controlled in some way. This required a strong leader to clarify the goals and actively seek to persuade other group members that these were justified (after Peterson et al. 1998). According to Haslam (2001), if decision-making groups are designed with a safety first principle in mind which serves to protect the organisation (in the Drentsche Aa case the formal perspective) from radical decisions, then (multi-actor) groups are created that are non-threatening both to the participants and to the organisation as a whole., e.g., by giving the group no formal power. The chairmen are thus given the challenging task of creating groups that are visible and abundant but superficial and relatively powerless. According to Haslam (2001), a common way to respond to this challenge is to allow the rhetoric of group participation to create groups that are used primarily to pacify participants rather than to empower them. This explains the limited room for negotiation on the multi-actor platform in the Drentsche Aa. Actors were invited to an open dialogue and negotiation process in response to the protest against the National

Park nomination. This pacified them and stopped the protests, but in practice the open dialogue and negotiation only involved the solutions and not the contested problem definitions. This greatly reduced the innovative (or changing) power of the multi-actor platform and made it relatively harmless to the formal perspective. On the formal multi-actor platforms, meetings were structured by an agenda with items written down beforehand, leading to decisions and agreements that, again, were written down. Communication was formalised as much as possible by making it as document based as possible. This prevented participants from generating other ideas and experimenting with various courses of action other than the ones planned (Aarts and Van Woerkum, 2002).

This also explains why the Pie Bakers' Deliberation was very threatening to the Province of Drenthe. They could not control what was going on during the meetings of the Pie Bakers' Deliberation. The Pie Bakers' Deliberation thus posed a threat to the self-reference of the system and had to be controlled. When this proved impossible, it was ignored and policy makers just denied its existence.

8.1.4 The price

Ideally, a majority of stakeholders will see the multi-actor platform as a legitimate forum for open and unbiased dialogue. If this is not the case, it will have significant influence on the way different groups react to the dialogue and the support they give. So although the strategy of eliminating views and interests can be viable and successful in the short term, it can prove to be a dead end in the long run. Problems cannot be successfully resolved by eliminating conflicting interests. To the extent that such problems remain unaddressed, they become a hidden conflict which sooner or later becomes the stalemating context (Morgan, 1998). Hisschemöller and Hoppe (2001, p. 62) also argue that 'by excluding other actors from participation decision makers may ignore, slight, or obscure differences of opinion which reflect divergent perceptions (in terms of knowledge as well as goals) of the problem situation. Thus policy makers run the risk of being mistaken or biased in their perception of the motives, intensions, beliefs and values of others. This generates a fundamental mismatch between decision makers' and other actors' problem frames. The excluded may feel so seriously hurt that they withhold their trust in authorities, policymaking procedures, and institutions. This will inhibit or even block any political settlement of the problem.'

In the Drentsche Aa area, this is exactly what happened; goals were contested because participating actors had conflicting interests. The provision of subsidies to conventional farmers motivated them to farm as intensively as possible. Meanwhile, the government paid the State Forest Service on the basis of its 'output' of hectares of rare vegetation. What this boils down to is that farmers were paid to fertilise and drain the land which the State Forest Service was paid to keep nutrient free and wet. So both the farmers' representatives and the State Forest Service representatives had not only very inflexible but also very contradictory mandates when they entered the negotiation process. For years, the planning and design of the National Landscape did not move an inch. The process became stalled under the effort to contain negotiation within the boundaries set by the formal policy perspective. A dialogue on common values and an understanding of what was at stake were not possible because the dominance of the formal policy perspective did not allow it. This led to stalemate.

Finally, the chairman enforced the formal policy perspective, but this came at a price. Intensive modern farming was compromised, a high transaction cost because this reduced the constituencies' trust in the process, reducing their feeling of ownership and their commitment with regard to the outcome of the negotiation process. Representatives lost legitimacy and the recognition of their constituencies. Their constituencies decided to take matters into their own hands and started searching, outside the formal perspective, for creative solutions to the problems that they were experiencing. They decided to experiment and invest together, for example in collective meadow ownership and management. They explicitly avoided government involvement. So, the government action in trying to rule and control complexity resulted in processes of self-organisation that undermined the initial attempt at control.

8.2 Recommendations

In this research, we used an interpretative approach to understand experts and expertise in different governance contexts in the Drentsche Aa area in the Netherlands. For us, interpretative research is first and foremost about developing a meaningful interpretation. In this section, we reflect on the meaningfulness of our interpretation both in a scientific sense and in a societal sense. We do so by reflecting on the societal relevance of our research. We discuss the implications of a production and use of knowledge in policy processes in which complexity is valued.

8.2.1 Valuing complexity, including the complexity of human behaviour

We have discussed how self-reference can be seen as a strategy to reduce complexity and achieve order in what seems to be a disorderly world. Policy makers in self-referential systems prefer to approach problems as if the government is in control, i.e., in a position, and with access to resources, to solve the problem. The crucial matter is whether a process aimed at problem solving values complexity and accepts uncertainty and unpredictability. If differences of opinion about social and political problems exist between persons and/or groups, then this complexity has to be embraced rather than controlled (Termeer and Kessener, 2007).

This requires a process that values coincidence and tolerates ambiguity and pays attention to points of leverage that can overcome self-reference. From a complexity theory perspective, self-reference can be understood as the tendency of systems (including organisations) to return to a stable state when pushed out of equilibrium. However, when systems are pushed too far out of equilibrium, they no longer have the resilience to return to their original state and they may branch off into an entirely new state (Stacey, 1995; Morgan, 1998). The point of instability at which unpredictable events take place is referred to as the tipping point (Gladwell, 2000). At such times, apparently insignificant events (the flap of a butterfly wing) can have far-reaching consequences in a non-linear system (Gilchrist, 2000). Once a specific moment of critical mass is reached, small changes can have huge effects (see also Dörner, 1997).

The challenge is to recognise and create relevant preconditions leading to a such a tipping point. Most often, situations at the edge of a tipping point can be recognised as paradoxes or tensions between the status quo and alternative futures. Management of these paradoxes requires sensitivity to social processes and power that influence people's communication and behaviour in interaction (Termeer, 2001). If the process is not managed well, the actors belonging to the self-referential system may feel that the new alternative futures are a threat and engage in boundary work to protect their own interests. According to Argyris (1994), when people feel threatened, they will try to prevent these feelings by denying, ignoring, attacking, minimising the gravity, searching for support or shifting the blame. It is very important to respect the formal system representing the status quo (Blok, 2001; Wagemans, 2002) while creating space for new solutions outside and independent of the formal perspective.

8.2.2 Valuing and facilitating self-organisation

Because we cannot rely on self-referential systems to come up with new solutions to old problems, what is needed is a by-pass (Wagemans, 2002), which necessarily falls outside the formal perspective. This requires self-organisation of actors with non-traditional views who should be given the opportunity to think about alternative futures, and they should be permitted to work out ideas and proposals, even when these conflict with enforced rules, regulations and procedures. This is a process of experimentation and discovery (Wagemans, 2002). New ideas will seep in naturally and may eventually become mainstream, even when those same ideas previously would have met with much resistance (Termeer and Kessener, 2007). In the Drentsche Aa area, the Farmers for Nature initiative and the Pie Bakers' Deliberation can be considered such by-passes. The Pie Bakers' Deliberation spontaneously emerged on the margins of the formal multi-actor platform in order to address the need among actors to experiment with new ways of building relationships. It by-passed the formal perspective and explicitly avoided the involvement of policy makers. The Farmers for Nature initiative was motivated by the conviction that intensive modern farming in the Drentsche Aa would only exacerbate problems instead of solving them. It explicitly addressed the multi-functionality of agriculture. Whereas the formal representatives were caught in a deadlock, on the local level farmers were experimenting with ways to make agriculture a profitable multi-output activity producing not only commodities (food), but also non-commodity outputs such as environmental services, landscape amenities and cultural heritages. The local farmers organised things themselves because they did not want to become dependent on subsidies or other bureaucratic governmental procedures. Generalised positions that the actors took on the official formal platform ignored these experiments on the local level. It was much more difficult to come to an agreement in negotiations among formal actors with official mandates than in discussions among local farmers in the field that started experimenting outside the formal perspective.

What is the role of facilitators in such cases and to what issues must they be sensitive? Facilitating such processes often seems completely overwhelming. Facilitators functioning in the midst of this complexity are part of the flux. They facilitate the process and flow with the change rather than try to pre-design and control it in a more traditional way (Morgan, 1998). Facilitators must accept and value multiple and sometimes conflicting views. They must cope with multiple and emerging goals and respect the creativity and potential of different

perceptions (Ashmos et al., 2000; Wagemans, 2002). The challenge is not simply assembling a group of actors and banging their head together to get results. It is about constructing new perceptions, interests, values, goals, means and activities (Termeer, 2001). This requires active facilitation of the interactions, inducement of negotiated agreement, conflict resolution and concerted action. In addition, facilitators must develop a heightened awareness of boundary work. New experiments are often neutralised by the status quo, so it is vital that the facilitator becomes skilled in the art of managing boundaries: building them when necessary to protect an initiative and breaking them when powerful perspectives have been developed and the initiative is strong enough to survive on its own (after Morgan, 1998). This is important, because if an organisation remains locked into the old context, no significant change is possible. It will then end up trying to do something new in old ways. This requires attention to timing, serendipity and redundancy (Aarts, 1998).

8.2.3 Coordinating different levels and domains

The reflection so far has mainly focused on the multi-actor negotiation process itself. We now continue by reflecting on the multi-actor negotiation process in its wider societal context.

Multi-actor negotiation cannot be looked upon only as a regional process, but must be taken as a systemic whole which includes the institutional and policy conditions on different levels of organisation (see Van der Zouwen, 2006). Discourses at different levels of organisation influence each other, and therefore unresolved issues at the national level unavoidably express themselves at the regional level. As mentioned in section 8.1.4, conventional farmers and the State Forest Service had conflicting mandates in relation to the Drentsche Aa area: the farmers because their subsidies motivated them to farm as intensively as possible, the State Forest Service because they were mandated to protect the rare vegetation. The ensuing multi-actor governance process was clearly affected by this policy context because of these diametrically opposed mandates. Both sides found it hard to be reflective about the platform processes in which they were involved. Policy incoherence at an (inter)national level limited the space for change at a regional level. But what applies for the interaction between the national level and the regional level also applies to the interaction between the regional level and the local level. If representatives, by their involvement in a multi-actor negotiation process, are pressured to compromise and move with the dialogue group, they may change in culture and begin to belong to the dialogue group. In the Drentsche

Aa area, we have seen that this led to a certain alienation between representatives and their constituencies. A key issue for multi-actor negotiation processes, therefore, is the mandate representatives are given by constituent stakeholders. This mandate is highly determinant of the space for change. If representatives cross the line, they run the risk of losing legitimacy and the recognition of their constituencies, with the potential for conflicts (Röling and Woodhill, 2001).

Although regional-level multi-actor governance initiatives must operate within (not necessarily duplicate or reproduce) the national (or European) policy framework, national policy frameworks must also offer room for experiments on the local or regional level. This calls for co-ordination between levels in which the practical challenge is to search for avenues to experiment at different governance levels with other forms of institutions, regulations and so forth (Termeer, 2001; Buizer, 2008). It requires an overview of the entire dialogue process, taking into account not only the coherence of views and actions on the regional platform, but also the correspondence of the regional processes and the processes occurring at higher (national and perhaps even international) and lower (local) levels of organisation (see also Boonstra, 2004; Van der Zouwen, 2006).

8.2.4 Nature of scientific knowledge in our current society

We have already discussed how many familiar aspects of the old hierarchical governance setting remained in place in the new multi-actor governance context. Not least among these is the authority and reputation accorded to expert knowledge within more open multi-actor governance processes (see also Kerr, 2003; Irwin, 2006). Attempts at multi-actor governance recycled old ideas about science-based policy and sound science instead of aiming at active co-production of knowledge. It did not open up the discussion on the complexity and relativity of knowledge and therefore the discussion on whose knowledge counts. Traditional relations of professional power in the Drentsche Aa did not just disappear simply as a consequence of multi-actor negotiation and dialogue on multi-actor platforms. Despite the stated intention of allowing non-traditional policy actors to frame issues in their own way and based on their own experience and knowledge, there is little evidence that this was actually put into practice.

In our theoretical framework, we argued that scientific knowledge is like other forms of knowledge in many ways. There are no objective ways to argue for an increased truth value of scientists' and technologists' knowledge and experience as compared with others' knowledge

and experience. The value of scientific knowledge is often questioned not only because experts produce contradictory knowledge about specific issues but also because other types of expertise (e.g., lay expertise and local expertise) enter the political process. So, following Collins and Evans (2002), we ask why scientists' and technologists' advice should be specially valued if it is clear that they have no special access to the truth. Why should science be granted legitimacy because of the kind of knowledge it is? This opens up the debate to the question of how far participation in decision making should extend. A (re)negotiation of the rules of the game should be an important part of the negotiation process. This implies that a joint fact-finding process should in fact include joint rule finding. It requires a (re)consideration of what 'good' science or expertise entails, who 'owns' this knowledge, as well as a reconsideration of the institutions in which these cultural notions are embedded. It also requires knowledge and the management of social psychological mechanisms, such as stereotyping, that are associated with certain boundary work strategies. In policy processes, people are often represented as predictable beings (such as *homo economicus*), but this does not do justice to empirical reality. Joint fact-finding processes and joint rule-finding processes should incorporate a more realistic and complex representation of human nature.

Whatever the outcome of the joint rule-finding debate, these rules of the game should be made explicit from the start; otherwise, the process can easily lead to disappointment if the room for negotiation turns out to be more limited than expected, and attempts at multi-actor deliberation can easily be put aside as unsubstantiated words and empty rhetoric. Such criticism will only frustrate actors that view themselves as operating in good faith and to high professional standards.

8.2.5 Revisiting governance and the nature and role of experts and expertise

In this thesis, we have taken a critical (though not dismissive) stance towards shifts in governance and the democratisation of science by arguing that the current trend towards multi-actor governance (at least in the Netherlands) has not generally been accompanied by simultaneous change in the institutional and cultural assumptions with regard to science and expertise. Rather than viewing these as unfortunate flaws, we feel that, as new initiatives will necessarily meet with existing policies, structures and institutions, in practice the emergence of complex mixtures between the old and the new is inevitable.

This research has shown that multi-actor governance will always be exclusive, imbued with specific wishes and expectations about the participants and what they are required to do. Some people, perspectives, identities or interests will inevitably be excluded. It is important not only to acknowledge this exclusivity, but also to critically reflect on what kinds of exclusion are achieved and with what implications. We wish to promote a reflexive view on governance, experts and expertise. Such a view goes beyond current debates about participation as the intentional, correct or wrong application of techniques and methods. It also goes beyond the mere critical view on participation that only emphasises dominance, repression and control. This new perspective allows for reflection on what these governance practices achieve (intentionally or unintentionally) in terms of inclusion and exclusion of actors and their knowledge, and the implications of these achievements for governance and democracy. It recognises that governance initiatives will generate a variety of invited and uninvited responses. It considers both the initiators and the participants as actors in the sense that they act and shape the negotiation processes. In order to gain this insight, we needed to move beyond the level of plans and intentions and look into the concrete practices in which these plans and intentions materialised (or not). Furthermore, it was necessary not to restrict our analysis to the simple observations that actors were represented on platforms and invited to discussion evenings. It was crucial to extend our research to focus not only on what actually happened inside these platforms and during these evenings but also on what happened outside these fora in terms of actor involvement and non-involvement. We needed to explore the context-specific and contingent social processes, underlying assumptions and operational principles through which identities were constructed and negotiated in interaction.

All in all, such a reflexive view on governance, experts and expertise shows that the tensions and inconsistencies surrounding governance initiatives, and the role of science and expertise in these, reflect larger discussions about the form and direction of our science-based society (after Irwin, 2006). The traditional belief in our society is that 'good' science is grounded in Mertonian notions, and only this will lead to progress and technological innovation. Shifts in governance and a democratisation of science thinking rest on a different set of epistemological assumptions — that more democracy, and more radical democracy, is an essential precondition for the creation of a democratic society. Rather than mere talk, the current discussions on shifts in governance and democratisation of science at least in some cases reveal a great deal about governmental and scientific perspectives on the

necessity for, and direction of, change in our society. This implies that, when critical observations are being added to discussions on shifts in governance and democratisation of science, it is important to realise that this does not diminish the need to pay attention to both the shift in governance and a democratisation of science. On the contrary, even partial shifts in governance or attempts at democratisation of science reflect important trends in society. Rather than trying to undermine the importance of such initiatives, this thesis has aimed to draw attention to the specific practices that these initiatives result in, in order to acknowledge, explore and scrutinise their character and, as and when necessary, open them up to larger debate and inquiry.

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Appendix 1: Overview of presentations at conferences and seminars

June 2007	Presentation '*Framing of experts and expertise in different governance settings: The case of nature conservation in the Drentsche Aa in the Netherlands*', Amsterdam Discourse Centre, University of Amsterdam.
February 2007	Presentation '*Van goede plannen naar een goede uitvoering. Case: de Drentsche Aa - hoe de overheid van leiden naar begeleiden opschuift*' tijdens de 'Leren van een veranderend land' practitioners' conference, Maarssen.
October 2006	Presentation '*Over betrokkenheid van burgers en hun perspectieven op natuur*' on the SWOME/KSI market day 2006, Ministry of VROM.
June 2006	Presentation of the PhD research proposal during a PhD workshop at the *'Interpretative practitioner: from critique to practice in public policy analysis'* conference, University of Birmingham, 8-10 June 2006.
April 2006	Presentation '*The changing role of expert advice in nature conservation: a case of the Drentsche Aa*' during the 7th European IFSA conference, Wageningen 2006.
January 2006	Presentation '*Investigating knowledge: Knowledge, experts and non-experts*'. Guest lecture 'Investigating Knowledge', Wageningen University.
October 2005	Presentation '*De veranderende rol van experts in natuurbeheer: een case study van de Drentsche Aa*' during the GAMON/ SWOME market day 2005, Ministry of VROM.
April 2004	Presentation '*Social learning and the changed construction of nature conservation*' during the 6th IFSA conference, Vila Real 2004.
November 2003	Presentation '*The Drentsche Aa in Nederland*' during the National SLIM meeting with practitioners in Boxmeer.

Appendix 2: Overview of publications

Turnhout, E., S. van Bommel and N. Aarts (in prep.). Creating citizens? Performing citizenship in participatory environmental governance. *Environment and Planning D*.

Van Bommel, S. and N. Aarts (submitted). Framing experts and expertise: the case of participatory environmental policymaking in the Drentsche Aa in the Netherlands. In: Donohue, W.A., S. Kaufman, and R. Rogan (eds), *Framing in negotiation: state of the art*. Blackwell publishing.

Van Bommel, S., E. Turnhout and N. Aarts (2008). *Policy Makers from Saturn ...Citizens from Uranus... Involving citizens in environmental governance in the Drentsche Aa area*. Wageningen: Milieu en Natuurplanbureau.

Turnhout, E., S. van Bommel and N. Aarts (2008). Maakbare burgers? Participatie, betrokkenheid en burgerschap in de Drentsche Aa. In: Alberts, G., M. Blankesteijn, B. Broekhans and Y. van Tilborgh (eds), *Burger in uitvoering*. Jaarboek *Kennissamenleving*. Amsterdam: Aksant, pp 69-93.

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Van Bommel, S. (2006). The changing role of expert advice in nature conservation: a case of the Drentsche Aa. In: Langeveld, H. and N. Röling (eds), *Changing European Farming Systems for a Better Future: New visions for rural areas*. Wageningen: Wageningen Academic Publishers, pp 69-73.

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Appendix 3: Interview topics and questions

During the interviews, we asked different questions at different points in time, depending on the way our own insight into the situation progressed. During the early interviews, we tried to get insight into the key policy events that our respondents perceived to be important for the Drentsche Aa area becoming what it now is. When we had a basic idea of these key events, we used these to structure our subsequent interviews. We listed all relevant developments in the area in advance, and during the interviews we specifically asked our respondents about them.

Depending on the respondent, different topics were discussed. Whereas an interviews with a retired State Forest Service official (working in the Drentsche Aa area between 1958 and 1965) would first and foremost focus on the formulation of the *Gedachtenplan*, an interview with a stakeholder in the Preparation Committee would first and foremost focus on the formulation of the BIO Plan.

Key policy events
What where the most important events/developments/discussions/documents in the Drentsche Aa area in the 1950s, 1960s, 1970s, 1980s, the 1990s and the early 21st century?

For each event, development, document and/or discussion
Who did what to whom, when, where, why, how and with what kind of consequences?
What exactly happened? Why?
Where and when did this take place?
Who was involved, who was not involved? Why?
What did they do and why?
How did they do it?
What were the consequences of this?

Appendix 4: List of actors interviewed

	Name	*Place*	*Date*	*Affiliation*	*Taped*
1	Lourens Touwen	Borger	09-02	Plot Exchange Committee	No
2	Henk Everts	Borger	09-02	Everts en de Vries ecologisch adviesbureau	No
3	Jan Willem Kok	Borger	09-02	Waterschap	No
4	Henk Post	Borger	09-02	State Forest Service	No
5	Jan Tuttel	Anloo	10-02	NBEL	No
6	Herman Thije	Anloo	10-02	Province of Drenthe	No
7	Henk Post	Assen	09-01-03	State Forest Service	Yes
8	Ria Klein Woltering	Assen	03-03	DLG	No
9	Lourens Touwen	Assen	03-03	Plot Exchange Committee	No
10	Jan Tuttel	Oudemolen	10-06-03	NBEL	Yes
11	Jan Luuk Stel	Assen	26-06-03	NLTO	Yes
12	Johan Emmens	Rolde	07-03	NLTO	Yes
13	Prof. Bakker	Groningen	02-07-03	Groningen University	Yes
14	Arnold Boer	Den Haag	10-07-03	Min. of LNV	Yes
15	Wim Brunsveld	Den Haag	21-08-03	Min. of CRM	Yes
16	Herman Thije	Assen	21-08-03	Province of Drenthe	Yes
17	Ria Klein Woltering	Assen	30-09-03	DLG	Yes
18	Lourens Touwen	Assen	30-09-03	Plot Exchange Committee	Yes
19	Hans Elerie	Assen	7-10-03	BOKD	Yes
20	Jan Tuttel	Oudemolen	24-10-03	NBEL	No
21	Lourens Touwen	Oudemolen	24-10-03	Plot Exchange Committee	No
22	Jan Speulman	Anderen	24-10-03	Rural Entrepreneur	No
23	Fam. Ubels	Anderen	24-10-03	Free range Farmers	No
24	Mr. Smittenberg	Assen	12-01-05	Min. of LNV	Yes
25	Ali Edelenbosch	Assen	12-01-05	Provincial Delegate	Yes
26	Hendrik Lanjouw	Anloo	13-01-05	State Forest Service	Yes
27	Ria Klein Woltering	Assen	09-03-05	DLG	Yes
28	Lourens Touwen	Assen	09-01-05	Plot Exchange Committee	Yes
29	Greet Oosterhuis	Grolloo	07-04-05	Recron	Yes
30	Tienke Zingstra	Grolloo	07-04-05	Recron	Yes
31	Kees Folkertsma	Assen	23-04-05	Province of Drenthe	Yes
32	Alex Ernst	Yde	14-06-05	State Forest Service	Yes

33	Jannie Brinkman	Anloo	14-06-05	Villager	Yes
34	Johan Emmens	Rolde	20-06-05	NLTO	Yes
35	Gerard Wezenberg	Assen	20-06-05	BOKD	Yes
36	Ineke Boland		20-06-05	Villager	Yes
37	Jan Speulman	Anderen	21-06-05	Rural Entrepreneur	Yes
38	Hans Elerie	Assen	15-07-05	BOKD	Yes
39	Andre Brasse	Assen	15-07-05	NBEL	Yes
40	Walter ten Klooster	Middelburg	21-07-05	State Forest Service	Yes
41	Gert Jan Baaijens	Dwingeloo	9-08-05	Groningen University	Yes
42	Fenna Loode	Anloo	10-08-05	Villager	Yes
43	Freek Modderkolk	Assen	10-08-05	State Forest Service	Yes
44	Dick Klootwijk	Groningen	11-08-05	State Forest Service	Yes
45	Ko Albers	Anderen	11-08-05	Organic farmer	Yes
46	Jan Lucas Hofsteenge	Taarloo	11-08-05	Conventional farmer	Yes
47	Andre Jansen	Ede	14-09-05	Expert team brook meadows	Yes
48	Klaas Brinkman	Oudemolen	21-09-05	State Forest Service	Yes
49	Willem Speulman	Anderen	21-09-05	Part time farmer	Yes
50	Eddie Dijk	Eexterveld	22-09-05	Villager	Yes
51	Dik Schoppers	Eexterveld	22-09-05	Villager	Yes
52	Lenzen	Deurze	22-09-05	Conventional farmer	Yes
53	Fam. Domburg	Anloo	22-09-05	Villager	Yes
54	Fam Ebbinge	Grolloo	22-09-05	Conventional Farmer	Yes
55	Fam Boerma	Anderen	23-09-05	Conventional farmer	Yes
56	Pim Saalberg	Anloo	23-09-05	Villager	Yes
57	Dolf van der Wei	Eext	10-10-05	Estate owner	Yes
58	Fam. Ubels	Anderen	10-10-05	Free range farmer	Yes
59	Fam. Braun	Anderen	10-10-05	Villagers	Yes
60	Wietske Jonker	Vries	10-10-05	Drentsche Aa guide	Yes
61	Harm van Ree	Gasteren	11-10-05	Conventional Farmer	Yes
62	Ben Mulder	Gasteren	11-10-05	Villager	Yes
63	Jack van den Broecke	Gieten	11-10-05	Villager	Yes
64	Fam. Ardon	Anderen	11-10-05	Villagers	Yes
65	Fam. Van Diepen	Anderen	12-10-05	Villagers	Yes
66	Jaap de Jonge and Klaas Stallinga	Anloo	12-10-05	Villagers	Yes
67	Henk Everts	Groningen	20-10-05	EGG Consult	Yes
68	Edgar Stapelveld	Heino	08-11-05	State Forest Service	Yes
69	Henk van 't Land	Groningen	06-12-05	Waterboard Noorderzijlvest	Yes
70	Jan Streefkerk	Wageningen	27-01-06	State Forest Service	Yes

71	Ab Grootjans	Haren	27-02-06	Groningen University	Yes
72	Willem van Weperen	Beilen	21-04-06	ETC	No
73	Wietske Jonker	Oudemolen	04-07-06	Drentsche Aa guide	No
74	Uko Vegter	Veendam	06-12-06	Waterboard	Yes

Appendix 5: Overview of Drentsche Aa literature analysed

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Appendix 6: Overview of newspaper clippings analysed

08-05-1959	Drentsche en Asser courant	De waterstaatkundige toestand in het stroomgebied van de Drentse Aa
27-10-1962	Drentsche en Asser courant	Beekdalen, Fraaiste wat Drenthe aan natuurschoon bezit
09-02-1963	Drentsche en Asser courant	Een vurig pleidooi voor behoud
25-05-1965	Drentsche en Asser courant	B en W van Anloo weinig mededeelzaam; natuurreservaat van 2000 HA te Gasteren
29-05-1965	Drentsche en Asser courant	Verassingen voor Anloo, Liston en de Boerenpartij
22-06-1965	Nieuwsblad van het Noorden	Realisering landschapsreservaat de Drentsche Aa kost vele miljoenen
22-06-1965	Drentsche en Asser courant	Oppervlakte bijna 2500 hectare; landschapsreservaat kost vele miljoenen
24-06-1965	Drentsche en Asser courant	De kwestie 'landschapsreservaat'; gedeputeerde G. Londo sprak verlossend woord
01-07-1965	Drentsche en Asser courant	Stukken en stukjes in landschapsreservaat
17-09-1965	Nieuwsblad van het Noorden	Staatsbosbeheer werkt aan het landschap in noord-Nederland
18-09-1965	Drentsche en Asser courant	Voorlopige ruilverkavelingscommissie Anloo; landschapsplan remde installatie
26-01-1966	Nieuwsblad van het Noorden	Meer paden voor wandelen en fietsen; dal van Drentsche Aa in de toekomst voor rustzoekers
26-01-1966	Nieuwsblad van het Noorden	Commentaar; grootse plannen
26-01-1966	Drentsche en Asser courant	Besprekingen op hoog provinciaal niveau
22-02-1966	Drentsche en Asser courant	B en W van Anloo over opzet van landschapsplan voor Stroomdallandschap Drentsche A: 'Staatsbosbeheer is vederlicht over agrarische belangen heengewandeld'

26-02-1966	Drentsche en Asser courant	Hoe zit het met de agrarische belangen
04-03-1966	Drentsche en Asser courant	Waterschap: Drentsche Aa is groot natuurgebied
05-03-1966	Drentsche en Asser courant	In het *Gedachtenplan* over Stroomdallandschap Drentsche Aa zijn de vogels geteld, maar...
22-04-1966	Drentsche en Asser courant	Voorzitter Drentsche Waterschapsbond over stroomdallandschap Drentsche Aa; waterstaat- en landbouwkundig dwaze vertoning
4-5-1966	Drentsche en Asser courant	'Drentse Aa' stuurt aan minister boos telegram
14-12-1966	Nieuwsblad van het Noorden	GS Drenthe willen streekplan voor stroomdal Drentsche Aa
14-12-1966	Drentsche en Asser courant	Ruilverkavelingen Rolde en Anloo weer op gang; GS willen afzonderlijk streekplan Drentse Aa
07-01-1967	Drentsche en Asser courant	Hoofdbestuur DLG ontevreden over optreden Staatsbosbeheer; grondgebruiker kan de dupe worden van 'Stroomdalplan'
17-01-1967	Drentsche en Asser courant	R. Schuiling (PvdA): 'opboksen tegen stroomdalplan'; plannen Anloo blijven liggen door Drentse Aa
10-10-1967	Drentsche en Asser courant	Rapport van Drents Landbouwgenootschap: Deining om de Drentsche Aa.
13-10-1967	Drentsche en Asser courant	Gedeputeerde G.M. Lambers - bij opening waterschapshuis - over stroomdallandschap Drentsche Aa 'sterke krachten dringen er op aan'.
20-10-1967	Nieuwsblad van het Noorden	Eerste eis: schadeloosstelling; DLG is niet tegen stroomdallandschap rond de Drentse Aa
20-10-1967	Drentsche en Asser courant	G.M. Lambers over Stroomdallandschapsplan Drentsche A; 'eind dichter bij oplossing'
20-10-1967	Drentsche en Asser courant	Als *Gedachtenplan* wordt gerealiseerd; 'stroomdal Drentse Aa voor landbouw verloren'

24-10-1967	Nieuwsblad van het Noorden	Standpunt DLG over stroomdallandschap blijft onduidelijk
17-11-1967	Drentsche en Asser courant	Stroomdallandschap Drentse Aa; Staatsbosbeheer kocht reeds 200 ha grond
28-11-1967	Drentsche en Asser courant	Stroomdallandschapsplan Drentse Aa; raad Anloo wil een beslissing
04-12-1967	Drentsche en Asser courant	Scheidende voorzitter plattelandsjongeren; 'landschapsplan kwam overrompelend'
12-01-1968	Drentsche en Asser courant	Statenlid J. Oosterhuis over stroomdallandschap Drentse Aa; procedure grondaankoop geeft geen opluchting
28-09-1968	Drentsche en Asser courant	Drentse A weer eens buiten z'n oevers; boeren zullen het water (zoals al sinds onheugelijke tijden) voor lief moeten nemen
09-11-1968	Nieuwsblad van het Noorden	*Gedachtenplan* stroomdallandschap Drentsche Aa wordt gewijzigd
12-11-1968	Drentsche en Asser courant	Van verkleining nog geen sprake; stroomdallandschap wordt opnieuw bezien.
25-11-1968	Drentsche en Asser courant	Felle kritiek van Anloos raadslid H. Buiter op landschapsplan 'stroomdal Drentse Aa';'landbouw is het zat'; nu tijd voor resoluut 'ja' of 'nee'
10-01-1969	Drentsche en Asser courant	Georganiseerde landbouw wil nu daden. Deining onder boeren slaat nu om in paniek; stroomdal onder spanning
27-02-1969	Drentsche en Asser courant	Stroomdallandschap Drentsche Aa; gronden moeten binnen drie jaar gekocht worden
29-04-1969	Drentsche en Asser courant	Landbouw moet vertrouwenscommissie aanwijzen. Drentsche Aa moet b zeggen; richtlijnen voor aankoop van de gronden
21-01-1970	Drentsche en Asser courant	Plannen nog niet rond. Anloo en Rolde wachten al jaren op ruilverkaveling
28-12-1970	Drentsche en Asser courant	Beperkende bepalingen in stroomdallandschap struikelblok. Grondaankoop Drentsche Aa in impasse geraakt

12-01-1971	Drentsche en Asser courant	Rijk moet vorming landschapsreservaat Drentse Aa betalen
05-08-1972	Drentsche en Asser courant	GS stellen ontwerpstreekplan vast. Stroomdal-landschap bestemd voor rustige recreatie.
17-08-1972	Drentsche en Asser courant	Dit gebied moet bewaard blijven. Drentsche Aa: Eén brok natuur
22-09-1972	Drentsche en Asser courant	Vries niet eens met streekplan voor Drentse AA
30-09-1972	Drentsche en Asser courant	Stroomdal Drentsche AA; Anloo heeft bezwaren tegen facetstreekplan
28-03-1973	Nieuwsblad van het Noorden	Stroomdalgebied van Drentse Aa blijft nu bewaard
28-03-1973	Nieuwsblad van het Noorden	Drenthe gaat overleggen over Anderse Diepje
28-03-1973	Drentsche en Asser courant	Belangrijk besluit tijdens laatste zitting; behoud stroomdalgebied Drentse Aa is verzekerd
28-03-1973	Drentsche en Asser courant	Statenlid Eshuis (PAK) vraagt: 'spaar nu ook stroomdal van Anderse Diep'
01-09-1973	Drentsche en Asser courant	CRM geeft geld voor Drentsche Aa.
27-11-1973	Nieuwsblad van het Noorden	Milieuraad Drenthe in rapport: 'Stop ruilverkavelingen Rolde en Anloo direct'
28-11-1973	Nieuwsblad van het Noorden	Kamerleden steunen Milieu-raad Drenthe
05-12-1973	Nieuwsblad van het Noorden	Uitstel verkavelingen Anloo en Rolde tast rechtsgevoel boer aan'
12-06-1974	Drentsche en Asser courant	Door nieuwe grondaankopen. Stroomdallandschap omvat 1000 hectare
05-07-1974	Nieuwsblad van het Noorden	Rijk wil geld geven voor behoud Anderse Diepje, maar....' boeren ballen de vuist tegen landschap
05-07-1974	Nieuwsblad van het Noorden	Veel rijksgeld voor behoud Anderse Diep

06-07-1974	Drentsche en Asser courant	Waterschap Drentse Aa onderhandelt; boeren dwars over grondaankoop CRM bij Anderse Diepje
09-07-1974	Nieuwsblad van het Noorden	Behoud van Anderse Diep hangt aan zijden draad' Boeren in Anderen willen natuurgebied niet kwijt zolang er voor hen geen andere grond is
07-04-1976	Drentsche en Asser courant	Burgemeester van Anloo tegen GS: 'aandacht voor boeren stroomdallandschap'
23-09-1981	Drentsche en Asser courant	Proefschrift over stroomdal Drentsche Aa
09-10-1981	Drentsche en Asser courant	In stroomdallandschap Drentsche Aa. Voortbestaan houtwallen in gevaar.
09-11-1982	Drentsche en Asser courant	Gedeputeerde Willems in commissie: alternatieve landbouw niet in dal Drentsche Aa.
27-11-1982	Drentsche en Asser courant	'Van een boer maak je geen natuurbeschermer'.
9-12-1983	Drentsche en Asser courant	Deelplan Drentsche Aa.
13-07-1984	Nieuwsblad van het Noorden	PPR bezorgd over landschap Drentsche Aa; gebied is jarenlang vogelvrij geweest
19-07-1984	Drentsche en Asser courant	Assen bestrijdt opvatting in PPR-blad; 'Drentse Aa-gebied niet onbeschermd'
20-07-1984	Nieuwsblad van het Noorden	Witten en Loon in geweer tegen plannen Assen
27-07-1984	Drentsche en Asser courant	Raadslid Annen brengt klachten boeren naar buiten. 'Staatsbosbeheer onderhoudt natuur slecht.'
04-07-1988	Nieuwsblad van het Noorden	Programma van uitvoering streekplan; herinrichting en nationale parken
19-01-1989	Nieuwsblad van het Noorden	Waarschuwing natuurbescherming: 'streekplan moet beekdalen Drenthe beter beschermen'

09-06-1989	Drentsche en Asser courant	Staatsbosbeheer wacht op geld voor aankoop gronden langs de Drentse Aa; vaagheid rond natuurreservaat
22-12-1989	Drentsche en Asser courant	Water van Drentsche Aa voor drinkwatervoorziening. Steeds meer pompstations sluiten
08-05-1990	Nieuwsblad van het Noorden	Concept in commissie Anloo; beheersplan voor behoud van stroomdallandschap Aa
29-11-1991	Nieuwsblad van het Noorden	Commissaris Wim Meijer tot boermarken: beheersfunctie landbouw essentieel voor milieu
06-02-1992	Nieuwsblad van het Noorden	Drentsche A ooit Nationaal Park?
06-02-1992	Drentsche en Asser courant	Provinciebestuur Drenthe presenteert ontwerp voor nieuw Nationaal Park; bovenloop Drentse Aa beschermd
07-02-1992	Nieuwsblad van het Noorden	Onrust bij boeren over Nationaal Park Drentsche A
06-03-1992	Drentsche en Asser courant	Drents riviertje krijgt te weinig 'voeding' van grondwater.
13-03-1992	Drentsche en Asser courant	Maatregelen noodzakelijk om Drents riviertje weer schoon te krijgen. Bestrijdingsmiddelen taboe voor Aa.
22-4-1992	Nieuwsblad van het Noorden	Zorgen in Rolde over provinciaal Natuurbeleidsplan
01-07-1992	Drentsche en Asser courant	Maatregelen noodzakelijk om riviertje weer schoon te krijgen. Boeren ontzien met bestrijdingsmiddelen Drentsche Aa.
03-07-1992	Drentsche en Asser courant	Indirecte waterinname door spuitmachines moet oppervlaktewater schoonhouden. Gedeputeerde stelt alternatieve vulplaatsen in gebruik.
13-10-1992	Drentsche en Asser courant	Staatsbosbeheer brengt beekdalen terug in landschap
06-04-1993	Drentsche en Asser courant	Injectie om verdroging in Drentsche en Ruiner Aa tegen te gaan. Rijkssubsidie voor waterschappen

30-06-1993	Nieuwsblad van het Noorden	Sluimerende wens provincie gaat in vervulling; kabinet wil Drentse Aa als nationaal park
01-07-1993	Drentsche en Asser courant	Financiële injectie voor versterken kwaliteit landelijk gebied
05-07-1993	Drentsche en Asser courant	Natuur- en Milieu organisaties pleiten voor verdere 'vernatting' beekdalen: Vledder- en Wapserveense Aa worden groot natuurgebied.
26-10-1993	Nieuwsblad van het Noorden	Geld voor 'oude' natuurplannen
26-10-1993	Drentsche en Asser courant	Stroomgebied Drentse Aa en Elperstroom versneld op de schop; ministerie trekt de knip voor natuur
11-02-1994	Drentsche en Asser courant	Verdroging van stroomdalgebied vormt het grootste probleem. Toestand Drentsche Aa verslechtert.
21-10-1994	Drentsche en Asser courant	Boeren langs Drentsche Aa zoeken streekeigen product.
07-12-1994	Drentsche en Asser courant	Landbouwers Drentsche Aa-gebied slaan handen ineen.
19-01-1995	Nieuwsblad van het Noorden	Wageningen' helpt Rolde en Anloo
24-01-1995	Nieuwsblad van het Noorden	Vijftig miljoen in Drentse beekjes
27-01-1995	Nieuwsblad van het Noorden	Bewoners sceptisch over bestemmingsplan
06-05-1995	Nieuwsblad van het Noorden	Scepsis over idee Drentse Aa-gebied als nationaal park
15-07-1995	Drentsche en Asser courant	Reservaat zonder boeren of natuurgebied mét boeren; Aa-kaas, Aa-vlees, Aa-bier?
19-09-1995	Nieuwsblad van het Noorden	Drenthe haastig met stroomdal Drentse Aa
19-09-1995	Drentsche en Asser courant	Beekdal voor miljoenen guldens in de steigers

04-03-1996	Drentsche en Asser courant	Ook heideparfum, Aa-vlees en Aa-kaas komen niet van de grond. Project Drents bier mislukt.
07-03-1996	Nieuwsblad van het Noorden	Rolde en Anloo trots op bestemmingsplan
02-07-1996	Drentsche en Asser courant	Plannen in de maak voor omgeving Balloërveld en beekdal Drentse A; Nationaal park in Noord-Drenthe
27-08-1996	Drentsche en Asser courant	Raad, boeren en natuurbeheerders naar Schiermonnikoog voor ervaringen; Balloërveld hart nationaal park
20-09-1996	Drentsche en Asser courant	Voorzitter Voorlopige Commissie Nationale Parken over park Drentse Aa: gebied moet zelf grenzen kunnen aangeven
30-10-1996	Drentsche en Asser courant	Anloo positief over nationaal park
19-11-1996	Drentsche en Asser courant	Historisch geograaf Elerie over Drentsche Aa-gebied: Tankgracht op het Balloërveld moet blijven.
19-12-1996	Drentsche en Asser courant	Hunze en Aa stelt wel aantal voorwaarden; Waterschap akkoord met nationaal park
06-01-1997	Drentsche en Asser courant	Weinig geloof in hardheid voorwaarden gemeente Rolde boeren tegen nationaal park
07-01-1997	Nieuwsblad van het Noorden	Politiek wil aandacht voor landbouw in 'Drentse Aa'
16-01-1997	Nieuwsblad van het Noorden	Boeren in Loon niet blij met Nationaal Park
24-01-1997	Drentsche en Asser courant	B en W onder enkele voorwaarden akkoord met NP. Assen wil bezoekerscentrum
29-01-1997	Drentsche en Asser courant	Regiohoofd T.R. Klootwijk van Staatsbosbeheer Drenthe: heel stroomdal Drentse Aa in nationaal park
05-02-1997	Drentsche en Asser courant	Bedrag van 1.4 miljoen voor verplaatsing uit stroomdal ongebruikt; Drentse Aa-boeren te honkvast

21-03-1997	Drentsche en Asser courant	Miljoenen guldens voor beter milieu Drentsche Aa-gebied.
01-07-1997	Drentsche en Asser courant	Landbouw, natuur en politiek bereiken overeenstemming; kavelruil in Drentse Aa-gebied gaat toch door
29-09-1997	Drentsche en Asser courant	Toch landbouwgronden in nationaal park Drentse Aa
18-05-1998	Nieuwsblad van het Noorden	Nationaal Park Drentsche A stap verder weg
18-05-1998	Drentsche en Asser courant	Landbouw wil eerst meer zekerheden en meer geld; uitstel Nationaal Park Drentsche Aa
19-5-1998	Drentsche en Asser courant	Burgemeester R. Munniksma van gemeente Aa en Hunze: Drentsche Aa-gebied verdient een beschermde status
23-05-1998	Drentsche en Asser courant	Districtshoofd Henk Post van Staatsbosbeheer: creativiteit nodig voor oplossing van Drentsche Aa
19-06-1998	Drentsche en Asser courant	Miljoen voor kavelruil Drentse Aa
07-07-1998	Drentsche en Asser courant	Onderzoek naar NP met landbouwgrond erin
07-07-1998	Drentsche en Asser courant	Onderzoek naar Nationaal Park met landbouwgrond erin
08-07-1998	Drentsche en Asser courant	Landbouw en natuur rond Drentsche Aa tot elkaar veroordeeld
16-02-1999	Drentsche en Asser courant	Advies voor staatssecretaris over Drentsche Aa gebied in de maak; onderzoek naar landschapspark
24-02-1999	Drentsche en Asser courant	Voorzitter Laurens Touwen gebiedscommissie Kavelruil Drentsche Aa: 'Het eerste schaap is over de dam'
07-4-19990	Nieuwsblad van het Noorden	Natuur boven boerenbelang

07-07-2000	Nieuwsblad van het Noorden	Beek- en landschapspark Drentsche Aa stapje dichterbij
07-07-2000	Drentsche en Asser courant	Nationaal beek- en esdorpen landschap Drentsche Aa stap dichterbij
22-03-2002	Nieuwsblad van het Noorden	Van stroomdal naar droomdal
22-03-2002	Nieuwsblad van het Noorden	Bewoners kunnen zelf meepraten
11-05-2002	Dagblad van het Noorden	De Aa: vooral van de 'Stadjers'
25-06-2002	Dagblad van het Noorden	Hobbyboeren heersen rond Drentsche A. Aantal runt compleet landbouwbedrijf naast voltijdbaan elders.
20-09-2002	Dagblad van het Noorden	Boeren bang voor inperking door landgoed
19-11-2002	Dagblad van het Noorden	Drentsche Aa krijgt eindelijk officiële status
23-11-2002	Dagblad van het Noorden	Landgoederen Aa en Hunze in ijskast
05-12-2002	Dagblad van het Noorden	Niet zeuren over stopzetten aankoop grond'
07-12-2002	Dagblad van het Noorden	Minister
13-02-2003	Dagblad van het Noorden	Natuurontwikkelingsproject Amerdiep
19-02-2003	Dagblad van het Noorden	Europese bescherming voor Nederlandse natuur
07-05-2003	Dagblad van het Noorden	Contact met gasten is leuker dan aardappels uit de modder halen
17-6-2003	Dagblad van het Noorden	Op de fiets langs boerenbedrijven
05-09-2003	Dagblad van het Noorden	Boer in het Drentse Aa gebied staat met de rug tegen de muur

21-10-2003	Dagblad van het Noorden	Thema avond Drentse Aa
04-11-2003	Dagblad van het Noorden	Het is hier en daar fout gegaan in het Drentse Aa gebied
24-02-2004	Dagblad van het Noorden	Landschapsvisie Drentsche Aa
24-04-2004	Dagblad van het Noorden	Provincie zet ondernemers en boeren op slot
28-04-2004	Dagblad van het Noorden	Het Noorden in de nota Ruimte
24-05-2004	Dagblad van het Noorden	Gebrek aan vertrouwen doet Drentse boeren zeer
04-12-2004	Dagblad van het Noorden	Er groeit een stukje Polen in het hart van Drenthe
14-03-2005	Dagblad van het Noorden	Boermarken hekelen besluit van provincie
18-03-2005	Dagblad van het Noorden	Inloopavonden over Drentsche Aa
24-08-2005	Dagblad van het Noorden	Lekker spitten in vijf sterren natuurgebied
13-09-2005	Dagblad van het Noorden	Projecten rond het Deurzerdiep
21-10-2005	Dagblad van het Noorden	Miljoenen voor aanpakken van beekdal Elperstroom
08-11-2005	Dagblad van het Noorden	Boeren zetten zelf in op natuurontwikkeling
28-01-2006	Dagblad van het Noorden	Straks geen koe meer in Aa en Hunze
15-05-2006	Dagblad van het Noorden	Beperking waterwinning helpt natuur in gebied Drentsche Aa
14-06-2006	Dagblad van het Noorden	Boeren: Beperk Nationaal Landschap Drentsche Aa

29-08-2006	Dagblad van het Noorden	Knooppunt voor bezoekers van Drentsche Aa
21-09-2006	Dagblad van het Noorden	Boeren angstig voor regelzucht van provincie
21-09-2006	Dagblad van het Noorden	Zorg over boeren rond Drentsche Aa
27-04-2007	Dagblad van het Noorden	'Dat zoveel boeren zich verzetten, vond ik heel heftig'
06-07-2007	Dagblad van het Noorden	Elperstroom klaar voor de toekomst
16-11-2007	Dagblad van het Noorden	Offensief tegen droge natuur
28-11-2007	Dagblad van het Noorden	Haren claimt grote hap nationaal park
07-12-2007	Dagblad van het Noorden	Feestje jarige Drentsche Aa in stromende regen

Appendix 7: Glossary of abbreviations, organisations and Dutch names

Assistant Secretary of State (*Staatssecretaris*): political officer who together with the minister heads up each ministry.

Boermarken: traditional governance structures of the farmers for the management of the local common properties. Not only the traditional governance structures are referred to as boermarken but so are the commons.

BOKD (*Brede Overleggroep Kleine Dorpen*): association for interaction among small villages in Drenthe; largely focuses on the preservation of the cultural history of the area and the viability of the villages

Commissioner of the Queen (*Commisaris van de Koningin*): chairman of the Provincial Government and representative of the National Government in the Province.

Deliberation Committee (*Overlegorgaan*): multi-actor platform in the Drentsche Aa area (2002-present).

DLG (*Dienst Landelijk Gebied*): executive organisation of the Ministry of Agriculture, Nature and Fisheries.

Elected Provincial Deputy (*Gedeputeerde*): Provincial government official. The Provincial Council can elect up to nine Provincial Deputies. The Provincial Deputies together with the Commissioner of the Queen form the Provincial Government.

Foundation for the Administration of Agricultural Land (*Stichting Beheer Landbouwgronden*): this committee is the middle man between the State Forest Service and the farmers. Land is first sold to this foundation. The foundation is a public organisation that then redistributes the land on behalf of the government/province, according to the spatial plans. In practice this means that the foundation buys the land for the State Forest Service.

Gedachtenplan: Conceptual plan.

ITBON (*Instituut voor Toegepast Biologisch Onderzoek in de Natuur*): Institute for Applied Biological Research on Nature: Research institute. Predecessor of the RIN.

Land Re-adjudication Committee (*Cultuurtechnische Dienst*): a national organisation consisting of representatives of farmers' unions and representatives of several ministries. It decides upon the relevance of the land consolidation request and advises the provincial government.

Land registry (*Kadaster*) the land registry promotes legal certainty in transactions involving registered properties. In this context, legal certainty means clarity about to whom a certain moveable or immoveable property belongs and what its characteristics are.

Ministry of Culture, Recreation and Social Work (*Ministerie van Cultuur, Recreatie en Maatschappelijk Werk; Min. of CRM*). Formerly this ministry was called Ministry of Education, Art and Science.

Ministry of Education, Art and Science (*Ministerie van Onderwijs, Kunst en Wetenschappen; Min. of OKW*): in 1965 this ministry was renamed as the Ministry of Culture, Recreation and Social Work.

National Agency for Rural Development (*Dienst Landelijk Gebied; DLG*): a governmental executive agency of the Dutch Ministry of Agriculture, Nature and Food Quality. The agency translates government policies into practical rural development measures and operates on a national, regional and local level. Successor of the Rural Engineering Service (1995-present).

NLTO (*Noordelijke Land-, en Tuinbouw Organisatie*): Farmers' Union: called Drents Landbouwgenootschap until 1982 and then merged with other provincial organisations in the north to form NLTO after 1982. NLTO represents the interests of farmers in Drenthe.

Pie Bakers' Deliberation (*Koekenbakkersoverleg*): negotiation structure functioning on the margins of the Preparation Committee.

Plot Exchange Committee (*Kavelruilcommissie*): a committee that encourages and guides plot exchange.

Preparation Committee (*Voorbereidingscommissie*): multi-actor platform in the Drentsche Aa area (2000-2002).

Provincial Council (*Provinciale Staten*): provincial parliament elected by the people.

Provincial Government (*Gedeputeerde Staten*): provincial government elected by the Provincial Council, consisting of the Provincial Deputies together with the Commissioner of the Queen.

Provincial Planning Service (*Provinciaal Planologische Dienst*): service to assist and advise the Province with regard to spatial planning and design, e.g., of regional spatial plans (1942-1987).

Provisional Committee for National Parks (*Voorlopige Commissie Nationale Parken*): an independent advisory committee on National Parks of the Ministry of Agriculture, Nature and Fisheries (1980-present).

Provisional Council for the Protection of Nature (*Voorlopige Natuurbeschermingsraad*): an independent advisory committee on the protection of nature based in the Ministry of Agriculture, Nature and Fisheries (1946-1968).

Regional broker (*Gebiedsmakelaar*): the job of a regional broker is to encourage, coordinate and promote rural development resulting in integrated projects.

Regional Advice Committee (*Regionale Adviescommissie*): Multi-actor platform in the Drentsche Aa area (1998-2000).

RIN (*Rijksinstituut voor Natuurbeheer*): National Institute for Nature Conservation (1969-1991). Before 1969 part of this institute was called the RIVON.

RIVON (*Rijksinstituut voor Veldbiologisch Onderzoek ten behoeve van het Natuurbehoud*): the Botany Section of the Dutch national institute of field biological research (1955-1969).

Rural Engineering Service (*Cultuurtechnische Dienst*): an organisation that implemented the decisions of the Central Land Consolidation Commission. It had a staff of technical engineers in all provinces. The director of the Rural Engi-

neering Service was secretary of the Central Land Consolidation Commission. Later it became part of DLG.

SLIM (Social Learning for the Integrated Management and Sustainable Use of Water at a Catchment Scale): a multi-country study funded by the EU-DG XII Fifth Framework 1998-2002, under Project # EVKI-CT-2000-00064 SLIM.

State Forest Service (*Staatsbosbeheer*): Organisation that was founded in 1899 by the government to manage forest and nature areas.

Stroomdallandschap Drentsche Aa: Brook valley Landscape the Drentsche Aa.

Structure Plan for Rural Areas (*Structuurschema Groene Ruimte*): a policy document which reflects the vision of the national government on nature and the rural areas.

Summary

Chapter 1: Surprise in the Drentsche Aa area
This book begins with a story that tells the reader how and why it came to be written. It all started with a European project in which we wanted to investigate the potential of social learning for solving complex problems. This project was based on the argumentation that complex problems often involved different stakeholders with different interests, values, convictions and perceptions with regard to the problem at stake. Accordingly, a social learning approach was required in which a set of multiple, interdependent stakeholders would be placed in an intersubjective position in which they would engage in co-production of knowledge to construct goals and solutions to complex problems. We had selected the Drentsche Aa area as a case study. In this area, a multi-actor platform had been installed to negotiate issues of resource use and management. We considered this platform to be a formal attempt at social learning. However, instead of leading to co-production of knowledge, efforts to learn together stagnated in fruitless negotiation. This surprised us. When the opportunity for an in-depth exploration of the situation presented itself in the form of this PhD research, we took it. The idea was that if we could get a better understanding of the relationship between the multi-actor negotiation context and the co-production of knowledge process, we could perhaps gain insight into what had happened in the Drentsche Aa during the European research project research.

Chapter 2: Theoretical framework: governance, experts and expertise
In the second chapter, we introduce the theoretical starting points of this research. Recent insights from literature on policy sciences, science and technology studies, and communication studies drew our attention to two theoretical trends. The first trend relates to the governance context and describes a shift from hierarchical governance to multi-actor governance. The second trend relates to the nature and role of experts and expertise and describes a shift from 'speaking truth to power' to 'co-production of knowledge'.

In the literature, the shift in governance is argued to be related to the shift in the nature and role of experts and expertise. It is argued that hierarchical governance relates to speaking truth to power. Speaking truth to power refers to a situation in which science by a single actor is thought to lead to gradual progress towards objective knowledge of truth. In this situation, knowledge production and knowledge use are conceptualised as separate processes in which traditional experts

produce knowledge and policy makers use it. Policy making involves a community of traditional (often scientific) experts that takes on the role of problem solver. Boundary work takes the form of ideological self-description in which the cognitive communities use criteria such as their self-described expertise being objective, theoretical, factual.

Multi-actor governance is argued to be related to co-production of knowledge. Co-production of knowledge refers to a situation in which multiple actors become involved in the processes of knowledge production and knowledge use. It recognises that science alone cannot provide the uncontested means and methods for solving problems. Instead of separate processes of production and use, this situation is conceptualised as a dynamic science-policy interface in which actors from different cognitive communities, including the traditional experts, are involved in interactive, co-production processes. Boundary work strategies take the form of a division of labour: each cognitive community contributes to knowledge production by providing its own expertise. As disciplinary boundaries are respected, there is no stereotyping. Demarcation criteria include practical issues relating to the division of labour between different cognitive communities and to the clarification of different tasks and responsibilities such as experience, norms and values, in addition to traditional scientific issues such as expertise being objective, theoretical, factual.

In this research, we question this way of relating governance to the nature and role of experts and expertise. Chapter 1 shows that the relationship between multi-actor governance and the co-production of knowledge is more complicated. We therefore introduce a third relation between governance and the nature and role of experts and expertise: 'expertise as ammunition'. Expertise as ammunition refers to a situation in which experts provide scientific expertise as arguments in a power struggle. The role of experts is like that of a lawyer, advocacy is their role.

In summary, we are interested in studying the shift in governance and the shift in the nature and role of experts and expertise, as well as how these trends relate to each other. To study the shift in governance, we decided to investigate the number and type of actors involved in the policy process at different points in time. With regard to governance, we distinguished three contexts, namely, 1) hierarchical governance, 2) multi-actor governance and 3) a hybrid form. To study the nature and role of experts and expertise, we decided to investigate the number and type of cognitive communities, their boundary work strategies and

their demarcation criteria at different points in time. We distinguished three natures and roles of experts and expertise, namely, 1) speaking truth to power; 2) co-production of knowledge and 3) expertise as ammunition.

This chapter concludes with the main research question: How can the role and nature of experts and expertise in different governance contexts and their possible changes over time be understood?

Chapter 3: Methodology
Chapter 3 deals with several methodological concerns. In this research, we used an interpretative perspective; this means that we assumed that we live in a world that can be understood in multiple ways. This required placing ourselves within the context being studied to learn to understand the viewpoints and the practices of the actors involved. We therefore engaged in an in-depth case study of the Drentsche Aa area because this would allow us to close in on a real-life situation. In this area, we collected our data by means of interviews (taped, noted or both), observations and interpretations (noted), and copies of relevant documents.

With an interpretative approach, the significance of our interpretation could not be measured against any external, objective reality, so the credibility of our interpretation would depend on the extent to which our claims were presented in a convincing way. We used ideas from Bent Flyvbjerg's [51] 'narrative turn in research methodology' to construct our story and interpret our findings. The result is a virtual reality, so to speak, which we invite the reader to enter and explore inside and out.

Chapter 4: The Drentsche Aa area as a nature reserve (1960-1975)
Chapter 4 tells the story of how a few dedicated nature conservationists managed to conserve and protect nature in the Drentsche Aa area despite strong economic counter forces. In the early 1960s, biodiversity in the Drentsche Aa area was severely threatened by land re-adjudication and development procedures. State Forest Service officials decided to formulate a nature conservation plan to conserve (at least some of) the valuable nature values of the Drentsche Aa. To ground the plan scientifically, they involved scientists from the botany section of the Dutch national institute of field biological research (the RIVON) who held a monopoly cognitive claim to nature conservation. The plan was more than just a scientific report. It also strategically

51 Communicated during the course 'Narrative turn in research methodology', Aalborg, November 2006.

included a section on the potential recreational value of the Drentsche Aa area to emphasise its societal relevance. When the plan was finished, it was submitted to the ministry, which approved it and made funds available to buy the brook meadows in the Drentsche Aa area and conserve them for public benefit.

Immediately after the plan was officially published, the farmers opposed it. They were angry that the policy-making process had bypassed them. These protests were largely ignored, and negotiations started concerning the implementation of the plan, namely, the price for which the agricultural lands were to be purchased. To facilitate these negotiations, additional funds were made available to compensate the farmers for withdrawing agricultural lands from future agricultural use. These provided a real incentive, and quite a few farmers decided to sell.

As its land ownership increased, the State Forest Service ran into the problem of how to manage its plots. The officials were aware that they had to continue traditional agricultural management in order to conserve the traditional biodiversity-rich vegetation, but they lacked the knowledge to do this. They decided to offer jobs as nature conservationists to farmers who sold their land. The nature conservationists and the farmers came to an uncomfortable truce, but beneath the surface the conflict continued to simmer. This hidden conflict remained unacknowledged in the 1980s and early 1990s but would resurface again in the late 1990s.

The process described in this chapter resembles a predominantly hierarchical context with multi actor influences. The actors involved in the policy process were all traditional governmental policy actors or scientific experts. Although there was some concern about social support, scientific knowledge was considered the most important problem-solving mechanism and therefore an important legitimisation of the policy process. Policy making was driven by a cognitive community of scientific experts. As this community did not have to engage in boundary work with other cognitive communities, they alone were able to determine what constituted nature conservation expertise, and thus how the problem could be solved, without entering into debate with anyone else. The problem of protecting biodiversity in the Drentsche Aa area could be approached as a straightforward, uncomplicated situation. There was consensus on the goal (protection of biodiversity and nature) and there was consensus on the knowledge required to reach this goal (gradient theory). Boundary work involved

mainly ideological self-description. Demarcation criteria used included the concept of science being theoretical and objective. We can conclude that the nature and role of experts and expertise took the form of speaking truth to power.

Chapter 5: Contested management of the Drentsche Aa reserve (1970-2007)

Chapter 5 tells the story of the interactions, negotiations and conflicts between two different cognitive communities with regard to the management of the newly acquired Drentsche Aa reserve. In the 1960s, the RIVON institute had acquired a monopoly on nature conservation expertise (gradient theory) in the Drentsche Aa. In the 1970s, researchers from the University started to develop their own theory (ecohydrological theory on plant communities and groundwater flows) and challenged the cognitive monopoly of the gradient theory cognitive community. Without appropriate nature management, there was a risk of losing the rare and vulnerable vegetation that had been protected through hard work in the 1960s. This problem was shared by both the State Forest Service officials and the University scientists. However, there was no agreement on the proper ecological-scientific knowledge required to manage this vegetation. The final agreement about this knowledge was the outcome of boundary work between the University scientists and the State Forest Service officials. The problem of protecting biodiversity in the Drentsche Aa area could no longer be approached as a straightforward, uncomplicated situation. There was still consensus on the goal (protection of biodiversity and nature), but there was no consensus on the knowledge required to reach this goal (which theorie to follow). Although the policy process still included scientific knowledge as an appropriate problem-solving mechanism, complexity increased as the content of this ecological-scientific knowledge became contested.

National and provincial policy makers distanced themselves from the conflicting knowledge claims. This would fit in with a hierarchical approach to governance in which science and policy are seen as different domains, the former concerned with practices of knowledge production and the latter concerned with practices of knowledge use.

The processes described in this chapter resemble a predominantly hierarchical setting. Science was still seen as a problem solver (other types of knowledge were still excluded). The knowledge production process involved two cognitive communities that had conflicting views on expertise. Disciplinary boundaries were not respected, and there-

fore boundary work strategies took the form of stereotyping. Demarcation criteria included traditional criteria such as expertise being empirical, theoretical, factual and objective. We can interpret the nature and role of experts and expertise as expertise as ammunition.

Chapter 6: The Drentsche Aa area as a National Landscape (1999-2007)

Chapter 6 tells the story of the nomination of the Drentsche Aa area as a National Landscape. In 1993, the Drentsche Aa area was nominated as a National Park. Farmers fiercely opposed this nomination. To avoid open conflict and gain public support, a multi-actor platform was created to negotiate the design and management of the Drentsche Aa area. The platform included representatives of the Ministry of Agriculture, Nature and Fisheries, the Province of Drenthe, the State Forest Service, the Farmers' Union, the BOKD (representing the interests of small villages), and the tourist industry. Right from the start, it was decided to take the existing policy as the dominant framework for the negotiations. The farmers' representatives, who wanted to promote modern farming interests, found themselves in a difficult position. Modern farming fell outside the latitude of acceptance of the formal existing policy perspective, but for a long time this remained implicit. The process in the multi-actor platform was dominated by farmers and nature conservationists who defended their positions and did not want to compromise. The formal negotiations, for some time, amounted to little more than bargaining without wanting to compromise. When it proved impossible to bring the conflicting views together, the formal policy perspective was enforced and intensive modern farming was compromised. Nonetheless, individuals within the area began to network. They engaged in strategies that would by-pass the official platform. The local-level informal platform, the 'Pie Bakers' Deliberation', spontaneously emerged. Also, more and more initiatives emerged in which farmers organised things themselves, sometimes with other actors in the countryside sharing similar problems or similar ideals, explicitly avoiding government involvement. They did not want to be dependent on subsidies or other bureaucratic procedures. Instead, they experimented and invested together, for example in collective meadow ownership and management. Apparently, negotiation among formal actors was much less likely to result in creative solutions than discussion among people in the field who were closely involved with the local resource.

The process as described in this chapter resembles a predominantly multi-actor governance context with hierarchical influences. The

multi-actor platform was established with the ambition to involve public and private actors in policy making (multi-actor governance) but functioned within the boundaries set by existing policy (hierarchical governance). The governance context at that time can thus be characterised as a predominantly multi-actor governance context with hierarchical influences. The knowledge production process involved multiple cognitive communities, one of which can be characterised as a dominant coalition of actors. This dominant coalition had a monopoly with regard to expertise. The implicit assumption was that the problem and the goals were uncontested. The policy goals and the policy problem had been defined by the dominant coalition on the basis of traditional scientific expertise and therefore excluded other types of expertise. The dominant coalition of actors consisted out of policy makers and the BOKD. Policy makers adopted notions from cultural history in regional policy because rhetorically these aimed at more successful boundary work strategies in terms of accommodation. However, the farmers refused to accept the goals as defined by the dominant coalition. They challenged these goals, and consequently the nature conservationists felt threatened. This led to a boundary conflict between the farmers and the nature conservationists. The boundary work involved stereotyping. The demarcation criteria involved norms and values. In terms of the nature and role of experts and expertise, the boundary conflict between the farmers and the nature conservationists resembled expertise as ammunition. Initially, the dominant coalition ignored both the farmers' challenges and the boundary conflict between the farmers and the nature conservationists, but when it threatened to stall the process they enforced their own formal perspective. The boundary concepts allowed them to claim that both views had been taken into account in policy. In this instance, the nature and role of experts and expertise of the dominant coalition can be characterised as speaking truth to power. Boundary work can be characterised as ideological self-description.

Chapter 7: Conclusion and discussion

Chapter 7 wraps up the main findings and draws some conclusions by answering the main research question. It concludes that, in the Drentsche Aa area, there was no clear transition from an old hierarchical governance context, in which scientific expertise legitimised policy, to a new multi-actor governance setting, in which multiple actors engaged in co-production of knowledge. Instead, various governance practices as well as forms of experts and expertise existed side by side. Although over time it was increasingly recognised that the goal of biodiversity protection in the Drentsche Aa area was contested and therefore

became political, the role of knowledge remained unquestioned. In the Drentsche Aa area, the shift in governance and in the role and nature of experts and expertise both resulted in hybrids:

1. In the predominantly hierarchical context with multi-actor influences of the 1960s and 1970s, the nature and role of experts and expertise took the form of speaking truth to power
2. In the predominantly hierarchical context with multi-actor influences of the 1980s and early 1990s, the nature and role of experts and expertise took the form of expertise as ammunition
3. In the predominantly multi-actor governance context with hierarchical influences of the late 1990s and early 21st century, the nature and role of experts and expertise took the form of speaking truth to power (the dominant coalition of actors) with expertise-as-ammunition influences (the other cognitive communities).

This shows that types of governance and types of experts and expertise are ideal types that can reflect people's intentions but that will never occur as such in practice.

This PhD thesis shows that indeed shifts in governance are accompanied by shifts in the nature and role of experts and expertise but that the manifestation of this relationship is complex and ambiguous. The relationship between the two shifts turned out to be the outcome of power struggles over cognitive and political authority leading to the inclusion of some and the exclusion of others. Therefore, in this research, multi-actor governance intentions are related to speaking truth to power and expertise as ammunition, rather than to co-production of knowledge.

Chapter 8: Reflection

Chapter 8 revisits our initial surprise. We reflect on the conditions that would need to be fulfilled to create a less problematic hybrid. In the Drentsche Aa area, the hybrid proved problematic because the room for negotiation was perceived as too limited. Some actors had the illusion that they were invited to a dialogue in which everything was open for negotiation. As it turned out, the process was largely government led and ended up reproducing the formal perspective. This self-reference can be seen as a strategy to reduce complexity. Policy makers in self-referential systems prefer to determine what the goal is, and to a certain extent what the solution to the problem looks like. If other actors have different goals and interests, they may not accept the range of possible solutions defined by the policy makers. This generates a fundamental mismatch between decision makers' and other actors' problem frames, resulting in a hidden conflict or even stalemate.

If differences of opinion about social and political problems exist between actors, then this complexity has to be embraced rather than controlled. The challenge is to recognise and create relevant preconditions leading to a tipping point that can overcome self-reference. The formal perspective, representing the status quo, must be respected, but at the same time new solutions, independent of the traditional system, must be stimulated. This requires self-organisation of actors with non-traditional views. They should be given the opportunity to think about alternative futures and they should be permitted to work out ideas and proposals, even when these conflict with enforced rules, regulations and procedures. This also requires a (re)consideration of what 'good' science or expertise entails, who 'owns' this knowledge, as well as a reconsideration of the institutions in which these practices of knowledge production and use are embedded.

In this thesis, we have taken a critical (though not dismissive) stance towards shifts in governance and the democratisation of science by arguing that the current trend towards multi-actor governance (at least in the Netherlands) has not generally been accompanied by a simultaneous change in the institutional and cultural assumptions with regard to science and expertise. Rather than viewing these as unfortunate flaws, we feel that new initiatives will necessarily meet with existing policies, structures and institutions, and in practice the emergence of complex mixtures between the old and the new is inevitable. Rather than trying to undermine the importance of such initiatives, this thesis aims to draw attention to the specific practices that these initiatives result in, in order to acknowledge, explore and scrutinise their character and, as and when necessary, open them up to wider debate and inquiry.

Samenvatting

Hoofdstuk 1: Verrassing in het Drentsche Aa gebied
Dit boek begint met een verhaal dat de lezer vertelt hoe en waarom het geschreven is. Het begon allemaal met een Europees project waarin we wilden onderzoeken welke mogelijkheden het sociaal leren ons zou kunnen bieden bij het oplossen van complexe problemen. Het project was gebaseerd op de redenering dat complexe problemen vaak gekarakteriseerd worden door verschillende belanghebbenden met allemaal hun eigen belangen, waarden, overtuigingen en percepties met betrekking tot het probleem. Daarom dachten we dat sociaal leren een uitkomst kon bieden, omdat sociaal leren meerdere, wederzijds afhankelijke belanghebbenden in een intersubjectieve positie plaatst. Deze worden daardoor gestimuleerd om doelen van en oplossingen voor complexe problemen te formuleren door middel van coproductie van kennis. In het Europese project hadden we het Drentsche Aa gebied geselecteerd als casestudie. In dit gebied is een multi-actorplatform opgestart, speciaal voor onderhandelingen omtrent het gebruik en beheer van natuurlijke hulpbronnen. We zagen dit platform als een formele poging tot sociaal leren. Tot onze verrassing bleek het platform niet te leiden tot coproductie van kennis, maar bleken pogingen om van elkaar te leren vast te lopen in eindeloze en doelloze onderhandelingen. Toen de kans zich voordeed om deze situatie diepgaand te onderzoeken (in de vorm van een PhD-onderzoek), hebben we die kans met beide handen aangegrepen. We wilden een beter inzicht krijgen in de relatie tussen de multi-actoronderhandelingen en de coproductie van het kennisproces. We hoopten daarmee de situatie in het Drentsche Aa gebied beter te kunnen begrijpen.

Hoofdstuk 2: Theoretisch kader: governance, experts en expertise
In het tweede hoofdstuk introduceren we de theoretische uitgangspunten van dit onderzoek. Nieuwe inzichten in de literatuur rond beleidswetenschappen, wetenschapsstudies en communicatiestudies vestigden onze aandacht op twee theoretische trends. De eerst trend is gerelateerd aan governance en beschrijft de verschuiving van hiërarchische sturing naar multi-actorsturing. De tweede trend is gerelateerd aan de vorm en rol van experts en expertise en beschrijft een verschuiving van 'speaking truth to power' (een proces waarin wetenschappers gezien worden als experts die de kennis in huis hebben en op basis daarvan beleidsmakers adviseren) naar 'coproductie van kennis' (waarin iedereen expert is op zijn of haar eigen gebied, inclusief wetenschappers).

In de literatuur wordt er een verband gezien tussen de verschuiving in governance en de verschuiving in de vorm en rol van experts en expertise. Er wordt beargumenteerd dat hiërarchische sturing samenhangt met 'speaking truth to power'. Speaking truth to power refereert dan aan een situatie waarin wetenschap wordt gezien als een ontdekkingsproces, waarbij steeds meer objectieve kennis en waarheid wordt opgebouwd. In deze situatie worden kennisproductie en kennisgebruik als twee afzonderlijke processen gezien, waarbij traditionele experts kennis produceren en beleidsmakers deze kennis gebruiken. In zo'n beleidsproces nemen traditionele (vaak wetenschappelijke) experts de rol van probleemoplosser op zich. Groepen van experts (cognitieve gemeenschappen) trekken grenzen tussen zichzelf en anderen om daarmee hun eigen identiteit en expertise te kunnen claimen. Hiermee definieeren ze zichzelf als experts en anderen als pseudo experts of leken. Dit zogenaamde 'grenzenwerk' wordt in een hiërarchische sturingscontext een vorm van ideologische zelfbeschrijving, waarin cognitieve gemeenschappen refereren aan criteria als objectief, theoretisch en feitelijk om hun zelf geclaimde expertise te omschrijven.

Er wordt beargumenteerd dat multi-actorsturing samenhangt met coproductie van kennis. Coproductie van kennis refereert aan een situatie waarin meerdere partijen betrokken zijn bij de processen van kennisproductie en kennisgebruik. In zo'n situatie kan wetenschap geen onbestreden middelen en methoden meer bieden waarmee problemen opgelost kunnen worden. In plaats van afzonderlijke processen van kennisproductie en kennisgebruik, wordt deze situatie geconceptualiseerd als een dynamische kennisbeleid-interface waar verschillende actoren van verschillende cognitieve gemeenschappen, inclusief de traditionele experts, betrokken zijn bij interactieve coproductie van kennis processen. Grenzenwerk wordt dan een vorm van verdeling van werk: iedere cognitieve gemeenschap draagt bij aan kennisproductie door haar eigen expertise in te brengen. Omdat disciplinaire grenzen gerespecteerd worden, zijn er geen processen van stereotypering. Demarcatiecriteria refereren aan praktische zaken die te maken hebben met de werkverdeling tussen de cognitieve gemeenschappen en verduidelijken de verschillende taken en verantwoordelijkheden zoals ervaring, normen en waarden in aanvulling op de meer traditionele wetenschappelijke waarden als objectiviteit, theoretische onderbouwing en feitelijkheid.

In dit onderzoek, trekken we de manier waarop governance en de vorm en rol van experts en expertise aan elkaar gerelateerd worden in twijfel. Hoofdstuk 1 heeft al laten zien dat de relatie tussen multi-actorsturing en coproductie van kennis gecompliceerder is dan vaak gedacht.

Daarom introduceren we een derde manier waarop governance en de vorm en rol van experts en expertise aan elkaar gerelateerd kunnen zijn: 'expertise als munitie'. Expertise als munitie refereert aan een situatie waarin experts wetenschappelijke expertise leveren als argumenten in een machtsstrijd. De rol van experts wordt dan die van een advocaat, hun taak is verdediging.

Samenvattend zijn we geïnteresseerd in het bestuderen van een verschuiving in governance, een verschuiving in de vorm en de rol van experts en expertise en de manier waarop die twee samenhangen. Om de verschuiving in governance te bestuderen, hebben we het aantal en het type actoren onderzocht die op een bepaald moment betrokken waren bij het beleidsproces. Met betrekking tot governance hebben we drie verschillende contexten onderscheiden, namelijk 1) hiërarchische sturing, 2) multi-actorsturing, en 3) een hybridevorm van sturing. Om de vorm en rol van experts en expertise te bestuderen, hebben we het aantal en het type cognitieve gemeenschappen, hun grenzenwerk en hun demarcatiecriteria bestudeerd op verschillende momenten in de tijd. We hebben drie vormen en rollen van experts en expertise onderscheiden, namelijk 1) speaking truth to power; 2) co-productie van kennis en 3) expertise als munitie.

Dit hoofdstuk sluit af met de onderzoeksvraag: Hoe kan de vorm en de rol van experts en expertise in verschillende governancecontexten begrepen worden, alsmede de mogelijke veranderingen in de tijd hierin?

Hoofdstuk 3: Methodologie
Hoofdstuk 3 bespreekt een aantal methodologische zaken. In dit onderzoek hebben we een interpretatieve benadering gevolgd. Dat houdt in dat we aannemen dat we in een wereld leven waarin verschillende mensen er verschillende perspectieven op na houden. In deze wereld is er geen absolute waarheid. Ieder heeft zijn of haar eigen perspectief en handelingswijze die vanuit het gezichtspunt van die persoon op dat moment altijd juist is. Dit betekent, dat we ons moesten verplaatsen in de context die we bestudeerd hebben om de verschillende perspectieven en handelingswijzen te leren begrijpen van de partijen die we bestudeerden. Daarom hebben we gekozen voor een diepgaande casestudie van het Drentsche Aa gebied. Zo'n casestudie maakte het voor ons mogelijk om zo dicht mogelijk bij de realiteit te blijven. In het Drentsche Aa

gebied hebben we onze gegevens verzameld door middel van 75 interviews (opgenomen, genoteerd of allebei), observaties en interpretaties (genoteerd) en kopieën van relevante documenten (75 documenten, 170 krantenartikelen, notulen, brieven, etc.).
Door te kiezen voor een interpretatieve benadering konden we de betekenis van onze interpretatie niet naast een externe, objectieve realiteit leggen. Dat betekent dat de geloofwaardigheid van onze interpretatie af zou hangen van de mate waarin we onze claims op een overtuigende manier wisten te presenteren. We hebben daarvoor gebruik gemaakt van de ideeën van Bent Flyvbjerg's [52] 'narrative turn in research methodology' om ons verhaal op te schrijven en onze resultaten te interpreteren. Het resultaat is bij wijze van spreken een 'virtual reality'. We willen de lezer uitnodigen deze 'virual reality' binnen te stappen en te ontdekken.

Hoofdstuk 4: Het Drentsche Aa gebied als een natuurgebied (1960-1975)
Hoofdstuk 4 vertelt het verhaal van de manier waarop een aantal zeer toegewijde natuurbeschermers het voor elkaar gekregen hebben om de natuur in het Drentsche Aa gebied te beschermen, ondanks sterk economische tegendruk. In het begin van de jaren 60 (20e eeuw) werd biodiversiteit in het Drentsche Aa gebied bedreigd door de ruilverkavelingen die daar plaatsvonden. Staatsbosbeheer besloot een plan te maken om een aantal belangrijke gebieden rond de Drentsche Aa te beschermen. Om het plan een wetenschappelijke inslag te geven, zochten ze contact met wetenschappers van het RIVON. [53] Op dat moment waren de wetenschappers van het RIVON de enige experts op het gebied van natuurbeheer in Nederland. Toch was het plan meer dan alleen een wetenschappelijk rapport. Het bevatte ook een strategisch gedeelte over de potentiële waarde van het gebied voor recreatie en toerisme. Hiermee kreeg het plan niet alleen een wetenschappelijke, maar ook een maatschappelijke relevantie. Toen het plan klaar was, werd het ingediend bij het Ministerie. Die keurde het plan goed en stelde geld beschikbaar waarmee de bloemrijke hooilanden in het Drentsche Aa gebied (waar het allemaal om draaide) aangekocht konden worden door Staatsbosbeheer.

Meteen nadat het plan officieel gepubliceerd was, kwam er weerstand vanuit de boerengemeenschap. De boeren waren boos, omdat ze

52 Doorgegeven tijdens de cursus 'Narrative turn in research methodology', Aalborg, Denemarken, November 2006
53 RIVON: Rijksinstituut voor Veldbiologisch Onderzoek ten behoeve van het Natuurbehoud

volledig gepasseerd waren in het opstellen van het plan. Hun protesten werden voor het overgrote deel genegeerd en onderhandelingen begonnen met betrekking tot de uitvoering van het plan. De onderhandelingen gingen specifiek over de prijs waarvoor de bloemrijke hooilanden (voor het overgrote deel in handen van boeren) aangekocht konden worden door Staatsbosbeheer. Om de onderhandelingen te bespoedigen, maakte het Ministerie extra geld beschikbaar voor de aankoop van de gronden. Het ging om een zogenaamde 'vriendelijke meerwaarde'. Dit hield in, dat de gronden aangekocht werden boven de marktprijs om daarmee de boeren te compenseren voor het feit dat er geen landbouwgebruik meer mogelijk zou zijn op deze gronden. De vriendelijke meerwaarde bleek een enorme stimulans te zijn en veel boeren besloten hun gronden te verkopen.

Toen Staatsbosbeheer de gronden in handen kreeg, liep men tegen het praktische probleem aan, dat men die gronden ook moest gaan onderhouden. Traditioneel werden de gronden beheerd door boeren die daar een oud landbouwsysteem van maaien en afvoeren op toepasten. Staatsbosbeheer had die kennis niet, maar wist dat de boeren die kennis wel hadden. Daarom besloot men de boeren die hun land verkochten in dienst te nemen als natuurbeheerders. De natuurbeheerders en de boeren kwamen hiermee tot een ongemakkelijke vrede, maar onder de oppervlakte bleef het conflict door sudderen. Dit conflict bleef verborgen in de jaren 80 en zou pas weer naar boven komen op het eind van de jaren 90.

De situatie zoals beschreven in dit hoofdstuk reflecteert een overwegend hiërarchische context met multi-actorinvloeden. De partijen die betrokken waren bij het beleidsproces waren allemaal beleidsmakers en/of wetenschappelijke experts. Hoewel het natuurbeschermingsplan een maatschappelijke relevantie had, werd toch vooral de wetenschappelijke relevantie benadrukt. Wetenschap werd hiermee gezien als een belangrijke probleemoplosser en werd daarmee een belangrijke legitimering van het beleid. De cognitieve gemeenschap van wetenschappelijke experts speelde een belangrijke rol bij de formulering van beleid. Aangezien er op dat moment nog geen andere cognitieve gemeenschappen waren die iets over natuurbeheer te zeggen hadden, hoefden de RIVON-wetenschappers niet in debat met anderen. Zij hadden een monopoliepositie om te beslissen hoe natuurbeheerexpertise eruit zag en dus ook hoe het probleem opgelost kon worden. De bescherming van de biodiversiteit in het Drentsche Aa gebied kon benaderd worden als een simpel, ongecompliceerd probleem. Er was overeenstemming over het doel (bescherming van biodiversiteit en

natuur) en er was overeenstemming over de kennis die nodig was om dit doel te bereiken (gradiëntentheorie). Grenzenwerk was vooral een vorm van ideologische zelfbeschrijving. Demarcatiecriteria met betrekking tot wetenschap gingen over objectiviteit en theoretische onderbouwing. We kunnen concluderen dat de vorm en rol van experts en expertise gekarakteriseerd kan worden als 'speaking truth to power'.

Hoofdstuk 5: Omstreden beheer van het Drentsche Aa natuurgebied (1970-2007)
Hoofdstuk 5 vertelt het verhaal van de interacties, onderhandelingen en conflicten tussen twee verschillenden cognitieve gemeenschappen met betrekking tot het beheer van het pas aangekochte Drentsche Aa natuurgebied. In de jaren 60 had het RIVON een monopoliepositie met betrekking tot natuurbeheerexpertise (de gradiëntentheorie) in het Drentsche Aa gebied. In de jaren 70 begonnen wetenschappers van de Universiteit hun eigen theorie te ontwikkelen (een echohydrologische theorie over plantengemeenschappen en grondwaterstromingen). Deze theorie vormde een bedreiging voor het monopolie van het RIVON. Zonder het juiste beheer, liep men het risico om de zeldzame en kwetsbare vegetatie te verliezen die men in de jaren 60 met zoveel moeite had weten te beschermen. Deze urgentie werd gedeeld door zowel Staatsbosbeheer als de Universiteitsonderzoekers. Toch waren beide groepen het niet eens over de juiste ecologische kennis die nodig was voor het beheer van de vegetatie. Een uiteindelijke overeenstemming over die kennis was een gevolg van grenzenwerk tussen de Universiteitsonderzoekers en de Staatsbosbeheer beheerders. De bescherming van de biodiversiteit in het Drentsche Aa gebied kon niet langer benaderd worden als een simpel, ongecompliceerd probleem. Er was wel overeenstemming over het doel (bescherming van biodiversiteit en natuur), maar er was geen overeenstemming over de kennis die nodig was om dit doel te bereiken. Hoewel wetenschappelijke kennis nog steeds als een belangrijke probleemoplosser gezien werd, nam de complexiteit wel toe toen er geen overeenstemming meer was over wat die wetenschappelijke kennis dan wel of niet inhield.

De situatie die beschreven wordt in dit hoofdstuk kan hoofdzakelijk gekarakteriseerd worden als een vorm van hiërarchische sturing Zowel nationale als provinciale beleidsmakers namen afstand van de tegenstrijdige kennisclaims. Dit past bij een hiërarchische vorm van sturing waarin wetenschap en beleid als twee verschillende domeinen gezien worden, de eerste verantwoordelijk voor kennisproductie en de tweede

verantwoordelijk voor kennisgebruik. Er waren twee groepen met een claim of expertise betrokken bij het kennisproductieproces. De beide groepen volgden verschillende theorieën en dit leidde tot tegenstrijdige ideeën over natuurbeheer. Disciplinaire grenzen werden niet gerespecteerd en daarom nam grenzenwerk de vorm van stereotypering. Demarcatiecriteria betroffen vooral traditionele criteria zoals expertise moet empirisch, theoretisch, feitelijk en objectief zijn. We kunnen de vorm en rol van experts en expertise karakteriseren als 'expertise als munitie'.

Hoofdstuk 6: Het Drentsche Aa gebied als een Nationaal Landschap (1999-2007)

Hoofdstuk 6 vertelt het verhaal van de nominatie van het Drentsche Aa gebied als een Nationaal Landschap. In 1993 werd het Drentsche Aa gebied genomineerd als een Nationaal Park. Boeren protesteerden flink tegen deze nominatie. Om conflicten te voorkomen en draagvlak te creëren, werd er een multi-actorplatform gecreëerd om het ontwerp en het beheer van het Drentsche Aa gebied uit te onderhandelen. Verschillende partijen waren bij het overleg betrokken, o.a. het Ministerie van Landbouw, Natuurbeheer en Visserij, de Provincie Drenthe, Staatsbosbeheer, NLTO [54], de BOKD [55] en toerismevertegenwoordigers. Vanaf het begin werd besloten om bestaand beleid als uitgangspunt te nemen voor de onderhandelingen. De NLTO- vertegenwoordigers, die de belangen van de intensieve landbouw vertegenwoordigden, bevonden zich daarmee in een lastige positie. Intensieve landbouw paste niet in het bestaande beleid, maar dat bleef een lange tijd onduidelijk. Het multi-actoronderhandelingsproces werd gedomineerd door de natuurbeheerders en de boeren die allebei hun belangen fel verdedigden en beiden niet open stonden voor compromissen. Een lange tijd leidden de onderhandelingen tot niets. Toen bleek dat het onmogelijk was om de tegenstrijdige belangen van landbouw en natuur te combineren, werd het formele beleidsperspectief dominant gemaakt en werd intensieve landbouw aan banden gelegd. Terwijl dit speelde op regionaal niveau, zagen we ook van alles gebeuren op lokaal niveau. In het gebied begonnen mensen te netwerken. Er werden allerlei initiatieven opgezet die het officiële platform konden omzeilen. Een lokaal informeel platform, het Koekenbakkersoverleg, ontstond spontaan. Ook ontstonden er initiatieven waarmee boeren zichzelf organiseerden, soms samen met andere partijen die dezelfde problemen ervoeren of hetzelfde doel hadden. Deze vormen van zelforganisatie vermeden over het algemeen expliciet overheidsbemoeienis. Men wilde niet afhankelijk zijn van subsidies of andere bureaucratische procedures. Daarom besloot men samen te experimenteren en te

54 NLTO: *Noordelijke Land-, en Tuinbouw Organisatie*
55 BOKD: *Brede Overleggroep Kleine Dorpen*

investeren, bijvoorbeeld in collectief beheer van hooilanden. Blijkbaar leidden onderhandelingen tussen formele partijen tot veel minder creatieve oplossingen dan interactie tussen mensen die nauw betrokken waren bij de lokale problematiek.
De situatie die beschreven wordt in dit hoofdstuk kan vooral gekarakteriseerd worden als multi-actorsturing met hiërarchische invloeden. Het multiactorplatform was ontstaan vanuit de behoefte om publieke en private partijen te betrekken bij het beleidsproces (multiactorsturing) maar bleek uiteindelijk te moeten functioneren binnen de grenzen van bestaand beleid (hiërarchische sturing). Er waren verschillende cognitieve gemeenschappen betrokken bij kennisproductie. Eén van die cognitieve gemeenschappen bestond uit een dominante coalitie van actoren. Deze dominante coalitie had een monopoliepositie ten aanzien van expertise. De impliciete aanname was dat er overeenstemming was over het probleem en de doelen. De beleidsdoelen en het op te lossen probleem waren gedefinieerd door de dominante coalitie op basis van wetenschappelijke kennis. Deze doelen en deze probleemdefinitie sloot daardoor andere vormen van kennis uit. De dominantie coalitie bestond uit beleidsmakers en de BOKD. Beleidsmakers accommodeerden concepten van de BOKD met betrekking tot cultuurhistorie in het regionale beleid omdat deze concepten makkelijk retorische bruggen konden slaan tussen boeren en natuur. Toch weigerden de boeren de doelen van de dominante coalitie te accepteren. De doelen uit het regionale beleid vormden een bedreiging voor het voortbestaan van de intensieve landbouw in het gebied. De weerstand van de boeren werd door de natuurbeheerders als een bedreiging ervaren. Dit leidde tot een conflict tussen de boeren en de natuurbeschermers. Grenzenwerk werd gekarakteriseerd door stereotypering. Demarcatiecriteria kregen de vorm van normen en waarden. De vorm en rol van experts en expertise in dit conflict kan gekarakteriseerd worden als ‘expertise als munitie’.

In het begin negeerde de dominante coalitie het conflict tussen de boeren en de natuurbeheerders, maar toen het hele proces dreigde vast te lopen door dit conflict, werd er ingegrepen en werd het formele beleidsperspectief doorgedrukt. De concepten die geïntroduceerd waren door de BOKD om een brug te slaan tussen boeren en natuur werden nu ingezet om te claimen dat alle perspectieven waren meegenomen in het beleidsproces. De vorm en rol van experts en expertise in deze situatie kan gekarakteriseerd worden als ‘speaking truth to power’. Grenzenwerk kan gekarakteriseerd worden als ideologische zelf beschrijving.

Hoofdstuk 7: Conclusies en discussie
Hoofdstuk 7 geeft een overzicht van de resultaten en trekt conclusies

door de onderzoeksvraag te beantwoorden. Er wordt geconcludeerd dat er in het Drentsche Aa gebied geen duidelijke verschuiving was van een hiërarchische sturingscontext waarin wetenschappelijke expertise beleid zou moeten legitimeren naar een nieuwe multi-actor-context waarin verschillende partijen samen tot een coproductie van kennis zouden komen. In plaats daarvan is de conclusie dat verschillende governance praktijken en verschillende vormen en rollen van experts en expertise naast elkaar blijken te bestaan. Hoewel in de loop van de tijd wel bleek dat de bescherming van biodiversiteit in de Drentsche Aa controversieel was en daardoor ook politiek werd, bleef de rol van wetenschappelijke kennis onbetwist. In het Drentsche Aa gebied, namen de verschuivingen in governance, experts en expertise de vorm aan van hybrides:

1. In de voornamelijk hiërarchische governancecontext met multi-actorinvloeden in de jaren 60 en jaren 70, kunnen we de vorm en rol van experts en expertise karakteriseren als 'speaking truth to power'
2. In de voornamelijk hiërarchische governancecontext met multi-actorinvloeden in de jaren 80 en jaren 90, kunnen we de vorm en rol van experts en expertise karakteriseren als 'expertise als munitie'
3. In de voornamelijk multi-actorcontext met hiërarchische invloeden in de tweede helft van de jaren 90 en de eerste jaren van de 21ste eeuw, kunnen we de vorm en rol van experts en expertise karakteriseren als 'speaking truth to power' (de dominante coalitie van actoren) met 'expertise als munitie' invloeden (de andere cognitieve gemeenschappen).

Dit laat zien dat de typen governance en de typen experts en expertise ideaaltypen zijn die de intenties van mensen reflecteren, maar die nooit ook echt in die vorm kunnen voorkomen in de praktijk.

Dit proefschrift laat zien dat verschuivingen in governance inderdaad vergezeld worden door verschuivingen in de vorm en rol van experts en expertise, maar de manifestatie van deze relatie complex en ambigu is. De relatie tussen deze twee verschuivingen bleek de uitkomst te zijn van een machtstrijd over cognitieve en politieke autoriteit. Dit leidde tot het betrekken van sommigen en het uitsluiten van anderen. Daarom bleken in dit onderzoek multi-actorsturingintenties samen te hangen met 'speaking truth to power' en 'expertise als munitie' in plaats van met coproductie van kennis.

Hoofdstuk 8: Reflectie
Hoofdstuk 8 keert terug naar onze aanvankelijke verrassing. We reflecteren op de voorwaarden die nodig zouden zijn om tot een minder problematische hybride te komen. In het Drentsche Aa gebied bleek de hybride problematisch te zijn, omdat de onderhandelingsruimte door sommige partijen als te beperkt gezien werd. Zij hadden de indruk dat ze uitgenodigd waren om deel te nemen aan een onderhandelingsproces waarin alles nog ter discussie stond. Tijdens het proces bleek echter dat de onderhandelingen binnen het formele beleidsperspectief moesten vallen. Het gevolg hiervan was dat het multi-actorplatform uiteindelijk het formele perspectief ging reproduceren. Deze zelfreferentie kan gezien worden als een strategie om complexiteit te reduceren. Beleidsmakers in zelfrefererende systemen hebben de voorkeur om zelf te bepalen wat het doel is en besluiten daarmee ook tot op zekere hoogte wat de oplossing van het probleem is. Als andere partijen andere doelen en belangen hebben, dan kan er een situatie ontstaan waarin zij de mogelijke oplossingen, zoals gedefinieerd door beleidsmakers, niet accepteren. Dit leidt tot een fundamenteel verschil tussen de probleemdefinitie van beleidsmakers en de probleemdefinitie van andere partijen. Het resultaat kan leiden tot verborgen conflicten, maar ook tot patstellingen.

Als er verschillende meningen bestaan over de probleemdefinitie dan moet die complexiteit omarmd worden in plaats van beheerst worden. De uitdaging is het herkennen van relevante voorwaarden voor een omslagpunt dat zelfreferentialiteit kan doorbreken. Het formele perspectief, de status quo, moet worden gerespecteerd, maar tegelijkertijd moeten nieuwe oplossingen buiten het traditionele systeem gezocht worden. Dat vraagt zelf organisatie van partijen die buiten de hokjes kunnen denken. Die moeten de kans krijgen om na te denken over een alternatieve toekomst en ze moeten de ruimte krijgen om hun ideeën en voorstellen uit te werken, zelfs wanneer die tegenstrijdig zijn met bestaande regels en procedures. Dit vraagt een heroverweging van de betekenis van 'goede' wetenschap of expertise, wie die kennis heeft. Ook vraagt dit reflectie met betrekking tot de instituties waarin praktijken van kennisproductie en kennisgebruik zich bevinden.

In dit proefschrift hebben we een kritische (maar geen afwijzende) positie ingenomen ten aanzien van verschuivingen in governance en democratisering van wetenschap door te beargumenteren dat de huidige trend richting multi-actor governance (in Nederland) niet vergezeld wordt door een gelijktijdige verandering in de institutionele

en culturele aannames ten aanzien van wetenschap en expertise. We zien dit niet als een ongelukkige fout, maar we beschouwen complexe hybrides tussen oud en nieuw als onvermijdelijk wanneer nieuwe initiatieven in aanraking komen met bestaand beleid, structuren en instituties. Dit proefschrift heeft dan ook niet geprobeerd om het belang van dit soort initiatieven te ondergraven, maar wil juist de aandacht vestigen op de specifieke praktijken waar deze initiatieven in resulteren. We doen dit om inzicht te krijgen in het karakter van deze initiatieven en praktijken en, wanneer noodzakelijk, ze ter discussie te stellen in wetenschappelijke en maatschappelijke zin.

Completed Training and Supervision Plan

Description	*Department/Institute*	*Month/year*	*Credits*
I. Orientation			
CERES Introductory Courses	CERES	May 2005	5
II. Research methods and techniques and domain specific theories			
Interfaces between Science and Policy: epistemological and ethical implication	Nederlands Netwerk voor Filosofie van Wetenschap en Technologie	April 2005	3
Master Class Creating Matters of Fact	WTMC	Nov. 2005	1
The Narrative Turn in Research Methodology.	Aalborg University, Denmark	Nov. 2006	5
Short Intensive Course on Discourse analysis	University of Amsterdam, Amsterdam School of Social Science Research	June 2007	5
PhD study group (meeting to study literature, present and discuss papers related to 'governance')	Wageningen University	2005-2007	5
III. Presentations and workshops			
Poster presentation 'Social learning and the changed construction of nature conservation'	6th European IFSA conference, Universidade de Trás-os-Montes e Alto Douro, Vila Real	April 2004	1
Paper presentation 'Deconstructing the expert - non expert boundary in nature conservation in the Netherlands: Legitimization and credibility of knowledge'	CERES Summerschool	June 2006	4
Presentation of the research proposal 'Experts and expertise in governance arrangements: The case of nature conservation in the Netherlands'	Conference 'Interpretative practioner: from critique to practice in public policy analysis', University of Birmingham	June 2006	1
Paper presentation 'The changing role of expert advice in nature conservation: a case of the Drentsche Aa'	7th European IFSA conference, Wageningen University	July 2006	4
Total			34

Curriculum Vitea

Séverine van Bommel was born on 15 August, 1978 in Wageningen, the Netherlands. She spent most of her childhood in Afrika where she received home schooling. In 1994, the family returned to the Netherlands where Séverine finished high school at 'Hondsrug College' in Emmen. In 1996 she went to Wageningen University to study Forest and Nature Conservation. She formulated her own study programme with a focus on community-based conservation in the tropics which was accepted by the educational committee in 1997. In September 2002 she finished her MSc studies with honor. In October 2002 she started a PhD with the Forest and Nature Conservation Policy Group and the Communication Studies Group at Wageningen University. As she did not have financing for her PhD, Séverine has been working as an assistant lecturer and a research assistant during her PhD research. As an assistant lecturer she made a contribution to the courses Management of Change (2003-2007), Introduction to Communication and Innovation Studies (2004-2007), Introduction to Natural Resource Management (2004-2006), Trends in Forest and Nature Conservation (2004-2008), Forestry and Society (MSc European Foresty, 2004-2007), Communication and Organisation (2004-2005), Health and the Physical and Social Environment (2005-2006) and Investigating Knowledge (2006, 2008). As a research assistant she worked in the European SLIM project in (2002-2004) and the European LEARNing project (2003-2005). Last but not least, she carried out the research projects 'Communicatieve sturing in het natuurbeleid: framing, reframing en betrokkenheid van burgers' (2006) and 'Governance in het Nederlandse natuurbeleid: van draagvlak naar betrokkenheid' (2007) for the Environmental Assesment Agency. In Februari 2008 she started working as a researcher for Alterra. Here, she continues to analyse governance processes and multi actor negotiation processes in relation to national and international environmental issues.