



DIVERSITY AMONG FOREST OWNERS

A RESEARCH ON IDENTITY AND ITS IMPACT ON MANAGEMENT

Kirsten Haanraads

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Preface

This preface is probably the first thing you read. But, to me this is the finalization of six months of work. To some of you six months might sound like a short period, a research in the little league. To me, it has been six months in which I worked on my largest 'project' up to now. I loved working on this research, which I genuinely feel I can start calling my own. My aim has always been to contribute, in a modest way, to my scientific discipline; I hope you can also detect my enthusiasm about this research when reading it.

This thesis is part of my graduation period at Wageningen University. During my study on forest and nature conservation I came to realize that in order to be a nature conservationist you do not need to just work with nature, but, maybe even foremost, with people. Nature and people are connected and intertwined, and this relationship is especially present in a country like the Netherlands, where nature is scarce and people are not.

I consider myself lucky to be able to explicitly dedicate maybe one of my last activities at the university to this special and strong relation between people and nature. My aim has been to gain insight, and perhaps even to provide insight, into the extent to which the connection between nature and humans is reflected in our management. How much of ourselves do we put in our nature? Has nature become a reflection of us?

I immediately realised that answering such questions probably would not be possible during my thesis project, if ever. I needed to adjust my ambitions. Therefore, with more humble feelings I started this research. But, still I felt overwhelmed at times, because during the research I had the opportunity to meet and speak with many different owners and managers of forest and nature. They have given me valuable insight in the real world of forest and nature conservation, by telling me inspiring stories and teaching me valuable lessons. Therefore, I would sincerely thank the participants of my research for the experience, their help and input.

During the whole process of researching, reading, listening, discovering and writing I have had a lot of help. I owe a special thanks to Ineke Brusse and Evelien Verbij of the Bosschap. I am very grateful for their help in the first stages of the research, and their supportive ideas, feedback and suggestions in the later stages. Thank you for that.

I thank Marjanke Hoogstra for her help, providing me with structure and guidance. I feel lucky that she was able, to once again, guide me. I also thank her for her support and for her trust in me finding my own way.

The last section of this personal note I want to dedicate to my family and friends. I am grateful for their help and for taking my mind off things at times. And, I thank Michel, for his patience, help, enthusiasm and strength.

Summary

In the past, much research has been conducted to learn about the characteristics of forest and nature owners throughout Europe. This research is done because knowledge on the differences between the owners is considered important in order to be able to, for example, increase the adoption of policy, or to improve communication between owners and other parties. Furthermore, any differences between owners are expected to be reflected in the different choices each owner makes within the areas. This is important, because in situations with many owners present, these different management practices can result in positive as well as negative situations. In the past decade, the role of forest and nature has changed, as society calls for a different function, and the production of timber has lost importance to many owners. New paradigms like multifunctional forestry have emerged, in which various functions have become combined. With these changes in mind, and with an increasing number of forest owners following the new management approaches, the question rises whether any difference among the owners is still present?

Every owner has to make choices. These choices are always restricted by an environment of 'givens', existing structures which limit, and comprise of, for example, site restrictions, rules and regulations to obey, and means available. But even within these structures, it is considered that some options are still left and up to the owner to decide upon. The choice the owner then makes, and the reasons for deciding in that way, are based on some core ideas about the kind of forest and nature owner he is, or wants to be. This notion or these core ideas, reflects the identity of the owner. To learn about the differences among the owners, and thus about the diversity and the extent of that diversity, it must be traced back to its core; the identity. Identity and action are connected through a process of sensemaking, in which the identity is embedded and the action is shaped. The relation between identity and action, through this sensemaking process, provides the theoretical foundation of this research. Another important element of identity is the concept of image, or perceived identity. Within the sensemaking process the action is also influenced by the perceptions on others and the perceptions others hold. Diversity among forest owners can therefore be only fully understood when these perceptions are taken into consideration by means of the concept of image.

Through the use of face-to-face interviews with ten respondents of the broad array of Dutch forest and nature owners, the research aim is to gain knowledge about their diversity and the implications of that diversity for the management of forest and nature. The analysis of the research indicates that diversity among the owners is present, but that the differences are often the result of working within the existing structures. All respondents feel strongly a sense of responsibility towards society by means of the felt need to preserve cultural heritage and to provide the public with natural experiences. The extent in which this reflects within their management activities is strongly determined by practical considerations, like the size of the area and the means to perform a certain measure. The owners are also characterized by attaching a high value to natural characteristics and natural processes to occur. But, these differences are highly influenced by the need to generate income from timber production, by which the willingness to be nature oriented is subdued. Other management activities analysed within this research are mostly decided upon based on primarily practical considerations and seem to be much less the result of some core belief held by the owners. Another possible influence on management, namely image, seems to be difficult to detect, as the respondents provided little insight. This is the result of a lack of knowledge on the management activities of others, and a somewhat unwillingness to discuss the practices of the colleagues within the field. Overall, the research indicates that the forest owners are different, but these differences can't be traced back to their identities as clearly, but rather seem to evolve from the practical choices an owner is forced to make. The diversity among forest owners thus does have large implications for management, but in a different way than expected on forehand. Diversity among the owners seem largely the result of the owners' need to comply with rules and regulations, while in the meantime generating income and working in an area with restrictions of its own.

The results of this research indicate that the owners might share more than they think. This provides opportunities to increase cooperation and knowledge exchange among the owners. The lack of knowledge many owners hold on the management of others, and the struggle all owners hold in working within the environment of 'givens' indicates a possibility to bring owners more actively together and thereby providing a way to somewhat overcome any practical constraints.

1 Introduction

1.1 Background

The European forests have always been a subject of interest to researchers. Extensive studies have been performed to gain insight in various aspects of these areas. But, not only the forest itself, but also the forest owners are studied often. The forests of Europe are in the hands of a multiplicity of owners. These forest owners often play an influential role in the development of European forest areas. Therefore, research is dedicated to gain insight in these owners' lives. Many of these studies have focussed on the division of forest owners into groups, (see e.g. Arano and Munn 2006; Bieling 2004; Boon et al. 2004; Ingemarson et al. 2006; Karpinnen 1998; Kvarda 2004). These groups consist of forest owners who share certain characteristics, leading to typologies with distinct groups of different 'kinds' of forest owners.

This knowledge has been used to research the implications of those characteristics on the adoption or use of certain management practices, or the achievement of certain goals. For instance, typologies are constructed in order to investigate the possibilities of adopting close-to-nature management (Bieling 2004), in order to improve communication between the authorities and owners (Boon et al. 2004), in order to evaluate the forest management intensity (Arano and Munn 2006), or to gain insight in the owners' values and objectives (Karpinnen 1998). The owners are grouped according to their ownership characteristics; like a division in state owned, community owned and privately owned, or a division in small-scale owners or large-scale, industrial and non-industrial private owners, owners' attitudes, agricultural owners or non-agricultural owners. The assumption behind this division of owners in groups is that different kinds of owners manage their forests differently. The management practices are dependent on, for example, the size of the forest owned or the objectives of the owner. And thus, in order to, for example, increase adoption of policy, or to improve communication or management, it is necessary to gain insight in these differences and take them into account, (see e.g. Arano and Munn 2006; Bieling 2004; Bohlin and Roos 2002; Boon et al. 2004; Elands and Praestholm 2008; Hujala et al. 2007; Ingemarson et al. 2006; Karpinnen 1998; Kvarda 2004).

Differences among the forest owners can result in positive and negative situations. A negative situation is described by Kurttila et al. (2002). In their research they show that an ecological loss occurs when many different owners are present. Because of administratively delineated borders, lack of co-operation among owners, and because the management plans are not part of a complementary or broader landscape vision, degradation occurs. As Kurttila et al. (2002) notice: "this planning tradition and the mosaic-like ownership pattern have resulted in fine-grained and fragmented forest landscapes" (Kurttila et al. 2002: 70). This mosaic of forest areas results in a diminished variation in size distribution of the patches and a small scale of the different successional stages present. This, in turn, causes "adverse ecological effects in the form of habitat loss and habitat fragmentation: the case is that in managed forest landscapes the important resources of a number of forest-dwelling species (including animals, plants and fungi) occur in small and isolated patches" (Kurttila et al. 2002: 70).

This example shows negative consequences in the case of the presence of many different owners. But, it might also be argued that a diversity of owners, and thereby a diversity in management activities result in a positive mosaic of forest and nature areas. This mosaic then consists of forest and nature with different characteristics concerning age, structure, biodiversity, height etc. Such an area might just provide the sufficient amount of variation in order to accommodate many different species of plants and animals. Diversity among the areas might also enhance other services of forest and nature areas, like recreation. In the research of Van der Ploeg and Wiersum (1996) another consequence of the present of different forest owners is indicated; as private forest ownership structure is changing, forests and forestry will become more focussed on the provision of ecological and amenity services, rather than timber harvest. This structure of private forest ownership changes because an increasing number of forest owners do not depend economically on their forest anymore. The change towards a provision of different services within the forest leads to more variety of activities, because ecological and amenity services can be fulfilled in many ways. The variety of activities is expected to lead to many different activities within the field, which can be both positive and negative in many ways (van der Ploeg and Wiersum 1996).

Positive or negative consequences of the presence of many different owners are perceived to be based on the notion that each owner has his own set of values and goals. These differences in values

and objectives, and the goals leading from them, lead to different management activities within the field. But, then the question arises whether this really is the case. Do the owners differ in values and objectives, do their goals differ and is this really reflected in their management? Nowadays, new ways of forest and nature management have emerged, like integrated forest management, close-to-nature management and multifunctional forestry. These new concepts seem to indicate that the difference in management practices among the owners diminishes, because their activities within the field become more and more alike. This would in turn suggest that the positive and the negative consequences of the presence of many different owners would become less present as well. But, even when the differences within the actual management practices disappear, and the positive and negative consequences of the variation in owners becomes less present, it still isn't possible to claim that the owners do not differ anymore. The activities may have become similar, but it is argued that the elements underlying, influencing and shaping the decision may still differ much. In order to be able to assess the consequences of the new concepts of multifunctional forestry or close-to-nature management, it is thus necessary to gain insight in the underlying processes. This can be studied especially well in cases where many seemingly different owners are present, as is the case in the Netherlands.

Within the Netherlands, a highly urbanized country, many forest and nature owners are present. Also, the role of forests and forestry has changed in the Netherlands; timber harvest has become less important to many owners and new forest management paradigms have settled in the current management practices. For those reasons it provides an interesting case study in which the extent of the differences among the owners can be studied. The following will give some indication of the Dutch situation, and the most important owners in the field of forest and nature.

The forest area in the Netherlands consists of 359,845 hectares. This area has increased by 1,434 hectares per year, in average, since 1982. The forest area consists of 55,526 forest patches. Of those patches, 83 per cent is smaller than five hectares. The Dutch forest is thus divided in many small areas, with only some enclosed forest areas. These bigger forest areas cover 30 per cent of the total forest cover, but of all the forest areas in the Netherlands only one per cent is larger than 100 hectares (Ministry of LNV, Meetnet Functievervulling Bos Natuur en Landschap 2006).

Most of the forest and nature areas are owned by private owners. These private owners have 31 per cent of the total forest area in the Netherlands, owning together approximately 99,100 hectares. The second largest owner of forest is the government, by means of the State Forest Service (in Dutch: Staatsbosbeheer), with the responsibility for a total of 27 per cent or 86,100 hectares. Nature protection organizations, together, own seventeen per cent or 54,400 hectares of the forest land. Since 1983 however, the privately owned forest land has decreased, while the forest owned by the State Forest Service and the nature protection organizations has increased ((Ministry of LNV, Meetnet Functievervulling Bos Natuur en Landschap 2006).

1.2 Problem description

With the emergence of concepts like multifunctional forestry or close-to-nature forest management a trend towards similarity among forest management practices seems to be set. This trend occurs because those concepts incorporate a variety of management activities in the same approach. Before, a forester might choose to lay the focus on timber harvest, or nature conservation, or recreation, but with these concepts, these objectives are all of more equal importance. An increasing number of forest owners choose such an integrated forest management approach, and in that way becoming more similar in their forest management activities. This new paradigm within forest management has occurred because of the emergent idea that forests cannot continue to only provide economic opportunities, but that a combination of economic interest and nature conservation essential is to decrease, for example, vulnerability. This vulnerability is the result of the lack of species and structure because of the old objective related to just timber harvest. The new paradigm is also the result of social change; the roles of forests and forestry are changing to facilitate the changing needs of society. The forest is not longer wanted, but also not longer needed, to provide income, as less and less people depend on the income the forests provide. A shift occurs towards a provision of different kinds of services; ecological functions and amenity services like recreation become important.

Forest and nature owners manage and operate their areas within certain constituted structures. These structures consist of natural and more social restrictions and possibilities. For example, when

considering natural restrictions, the owner is bound to the geological, hydrological and geomorphological restrictions of the site. Social restrictions and possibilities comprise of, for instance, the existing legal framework and the resources the owner has as related to finance and knowledge.

Within these structures, the owner has to choose the actions to undertake. The actions that are then still left, after narrowing down because of the structures, are still multiple. They are up to the owner's choice. It can therefore be expected that with many owners, many different choices are made, and many different kinds of management practices occur. The owners' choice in favour of a certain action is determined by the goals and objectives these owners hold. And, these goals and objectives are essentially shaped by the notion the owner has of the kind of owner he is, and the kind of owner he wants to be. These notions are considered to reflect the identity of the owner.

A multiplicity of forest and nature owners, as is especially the case in the Netherlands, and their range of actions to choose from make any indication of their real differences and the implications of those differences difficult to detect. Therefore, the problem this research will try to act upon is thus the absence of insight into the core differentiating aspects of forest and nature owners in the Netherlands, as represented by their identity, in order to gain insight in the diversity among the owners.

The problem statement of this research is:

Currently, there is a lack of insight into the diversity and the characteristics of that diversity among Dutch forest and nature owners.

1.3 Research objective and research questions

The problem background and the problem statement have led to the formulation of the main objective of this research, namely to gain insight in the current level of diversity among forest owners and the implications of that diversity for the forest management activities.

In order to reach this objective, five research questions are formulated:

- I. What are the characteristics of the identity of forest and nature owners?
- II. What are the differences between the identities of the owners?
- III. How do the owners perceive the identities of the other owners to be?
- IV. Is there a difference between the 'real' identity and the identity as perceived by others?
- V. What are the implications of the results for forest and nature management?

1.4 Structure of the report

This report started with outlining the main problem at stake, which has led to the formulation of the problem statement. This problem was the catalyst for the definition of the research objective and the research questions evolving from it. Now the research focus is outlined, the theoretical framework will be presented in the second chapter. The theory on sensemaking, organizational identity and image will form the conceptualization of this research. The introduction, problem definition and statement, the research objective, the research questions and the theory are, together with the methodology in chapter three, the basis of the research. After the outlining of the methodology, the results will be presented. These results in chapter four, have led to the discussion and conclusion, chapter five and six respectively, which will be presented in the last part, concluding with the implications of the results and suggestions for further research.

2 Theoretical framework

2.1 Introduction

The diversity of forest and nature owners presumably leads to diversity in the areas they manage. This diversity is the result of the actions (and the absence of action) the owners undertake. An owner has many actions to choose from, and thus, the processes leading to and influencing the decision become important. These processes can be described by using the concepts of sensemaking and identity. This chapter provides a description of the theoretical framework of this research. This theoretical framework is developed in order to provide the context in which the research objective and the research questions will be addressed.

2.2 Sensemaking

Within this research, the process of sensemaking provides the basis on which the theoretical framework is developed. The sensemaking concept is exceptionally suitable because it provides an insight in the relation between decision making and action. Sensemaking links values and objectives with action by connecting it with the perception of reality by the decision maker. The process of sensemaking describes the way in which an action is undertaken based on considerations within the sensemaker; past experiences, perception of reality and the held values and objectives, and subsequently describes how this decision is made solid by relating relevant considerations outside the sensemaker; like the opinion of others and the (perceived) results. Within this study the field of interest lies with the manner in which held core values and objectives result in action, and because sensemaking is capable of making this invisible and often implicit process visible and detectable it has been considered so suitable.

2.2.1 What is sensemaking?

The process of sensemaking literally refers to 'making sense' of situations. The importance of sensemaking in relation to human behaviour is explained in the work of Weick et al. (2005) as "sensemaking (...) is the primary site where meanings materialize that inform and constrain identity and action" (Weick et al. 2005: 409). When looking at sensemaking, several questions are of importance, as Weick (1995) states: "How they construct what they construct, why and with what effects are the central questions" (Weick 1995: 4).

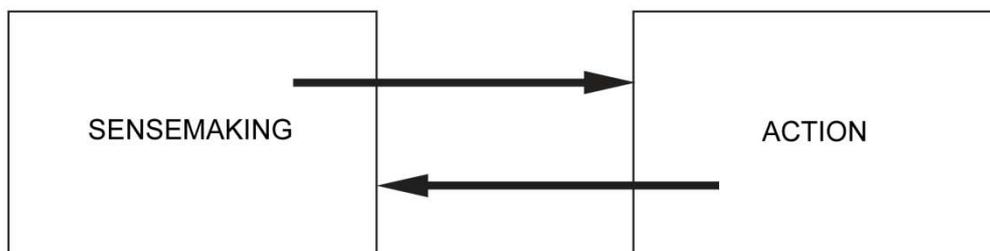


Figure 2.1 The relation between sensemaking and action

The relation between sensemaking and action can be visually represented as shown in figure 2.1. Sensemaking is the process by which action is shaped and made into being, while in turn the action shapes the sensemaking process as well. This indicates that the process of sensemaking, and its relation with action, is complex. In order to gain insight in this complexity, it is necessary to, first, describe sensemaking in more detail.

Sensemaking is extensively used and described by scholars, thus many descriptions of sensemaking are available. For example, "sensemaking involves turning circumstances into a situation that is comprehended explicitly in words and that serves as a springboard into action" (Weick et al. 2005: 409). Thomas et al (1993) consider sensemaking as "the reciprocal interaction of information seeking, meaning ascription, and action" (Thomas et al. 1993: 240). Sackman (1991) sees sensemaking as mechanisms that are used to attribute meaning to events. These mechanisms "include the standards

and rules for perceiving, interpreting, believing and acting that are typically used in a given cultural setting” (Sackman 1991: 33). Weick et al. (2005) describe sensemaking as: “Viewed as a significant process of organizing, sensemaking unfolds as a sequence in which people concerned with identity in the social context of other actors engage ongoing circumstances from which they extract cues and make plausible sense retrospectively, while enacting more or less order into those ongoing circumstances” (Weick et al. 2005: 409). The applicability of sensemaking as a prospective tool is described by Brown et al. (2008): “Sensemaking is a search for plausibility and coherence, that is reasonable and memorable, which embodies past experience and expectations, and maintains the self while resonating with others. It can be constructed retrospectively yet used prospectively, and captures thoughts and emotions” (Brown et al. 2008: 1038). Feldman (1989) indicates the necessity of sensemaking for organizations in order “to understand and to share understandings about such features of the organization as what it is about, what it does well and poorly, what the problems it faces are, and how it should resolve them” (Feldman 1989: 19).

2.2.2 The sensemaking process

Sensemaking can be recognized in cases when, first, something gets noticed. Within an ongoing flow of events, ‘something’ stands out. The flow of events is shaped by assumptions and anticipations, made both conscious and unconscious. The assumptions and anticipations lead to expectations and even prediction of the future (Weick 1995). When the expectation or prediction is not met, it becomes noticed. In this first part of the sensemaking process, a reciprocal relationship exists between sensing anomalies, enacting order into flux and the being shaped by externalities of the ongoing flow of events (see (1), figure 2.2).

The size of the element that stands out is not indicative of its significance. Weick et al. (2005) explain: “To work with the idea of sensemaking is to appreciate that smallness does not equate with insignificance. Small structures and short moments can have large consequences” (Weick et al. 2005: 410). When the event is noticed, and subsequently bracketed, “the world is simplified” (Weick et al. 2005: 411). The discrepant set of cues is only noticed retrospectively, as one is looking back upon an experience. Then, the observer tries to come up with plausible explanations to explain these discrepant cues (Weick 1995). Thus, although the world is simplified, still many meanings and interpretations are possible. The noticing and bracketing, the *enactment*, are thus only the ‘beginning’ of the sensemaking process because it only results in an unrefined categorization (see (2), figure 2.2) (Weick et al. 2005).

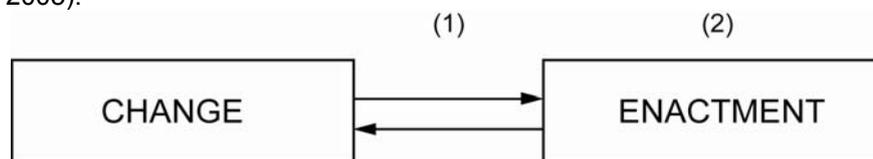


Figure 2.2 The reciprocal relationship between change and enactment (Weick et al. 2005)

The initial noticing and bracketing is further specified by *selection*, and the number of plausible stories gets reduced. In order to make sense of the situation, one will search for explanations and reasons that will enable the observer to cope with the situation at hand. The selection is “a combination of retrospective attention, mental models, and articulation [that] perform a narrative of the bracketed material and generate a locally plausible story” (Weick et al. 2005: 414). These explanations and reasons are originating from institutional constraints, organizational premises, plans, acceptable justifications, and traditions inherited from predecessors. The story, although plausible, is at this stage still tentative and provisional (see (3), figure 2.3).

During a process of *retention*, the story then becomes more solid. This increased solidity is the result of the retention process as the story is related to past experiences and connected to significant identities. These connections provide the basis for further action and interpretation (see (4), figure 2.3) (Weick et al. 2005).



Figure 2.3 The relations between change, enactment, selection and retention (Weick et al. 2005)

During the retention stage, there is an ongoing process of substantiating the story by connecting again with the elements of enactment and selection. The solidity and the interpretation are thus constantly reinforced by providing feedback on the enactment and the selection. When incorporating these feedback loops, the complete sensemaking process becomes clear, as shown in figure 2.4 (Weick et al. 2005).

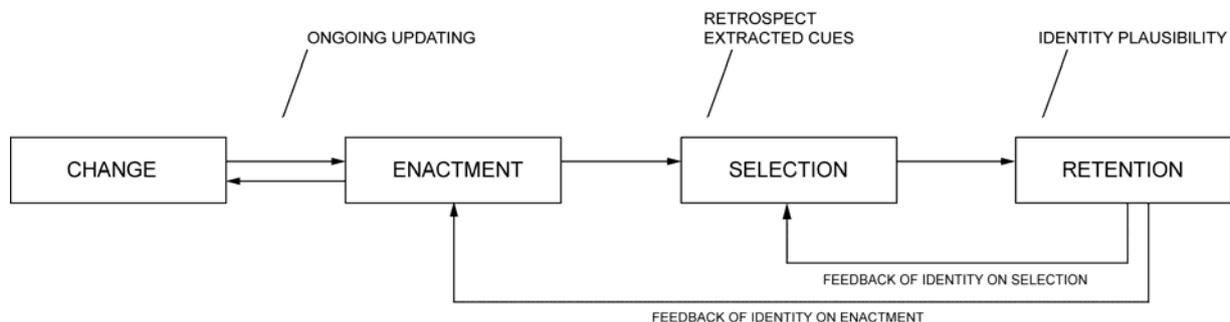


Figure 2.4 The sensemaking process (Weick et al. 2005)

2.2.3 The core characteristics of sensemaking

Sensemaking is a social event, because it is influenced by the system and the social actors within the system of the sensemaker, for instance previous discussions, a remark made by someone, or the presence of an influential (to the sensemaker) person in a certain situation. The process is also a societal event because of the interaction between the multiple selves of the sensemaker, or, as Mead (1934) states: “a parliament of selves” (Mead 1934). The possible and plausible interpretations that emerge from this sensemaking process are guidelines for action (Weick 1995). Especially among organizations, the situation is communicated. By language, the situation becomes, and is further shaped into action (Weick et al. 2005). Though the sensemaking shapes the action, the action shapes the sensemaking as well. As soon as the action is undertaken, the sensemaking process is already into being, making sense of the action itself. This means, that the action, as it is ongoing or just finished, is influencing the discrepant cues noticed as the trigger or source of the action itself (Weick 1995). As the action is ongoing or just finished, it is also influencing the surrounding or system, and in this way, altering the surrounding, leading to (possibly) new discrepant cues to be noticed (see figure 2.4). Weick (1995) remarks: “(...) a complex mixture of proaction and reaction, and this complexity is commonplace in sensemaking” (Weick 1995: 23).

The sensemaking process evolves within a certain frame of restrictions. Every sensemaker is restricted by surrounding structures. These structures can be practical in nature, like action restricted by lack of time, physical ability or financial means. But, sensemaking is also part of more social structures, like the notion of other peoples’ opinion, or the perceived or wanted status within society. Many of these structures can be present, and some structures may be more important across time and to different sensemakers. Most important about these structures are their position within the sensemaking process. As action is being shaped within the sensemaking process, and it is shaped in turn as well, this also goes for the structures. As sensemaking is a retrospective process, the structures relevant are given that relevance retrospectively. In this way, structures are not just static givens, but are dynamic alterations in time of relevant and existing frameworks in which the sensemaker makes sense.

Noticeable from the descriptions of the sensemaking process are some core characteristics. Weick (1995) described these characteristics when referring to the process as: “grounded in identity construction, retrospective, enactive of sensible environments, social, ongoing, focused on and by extracted cues, and driven by plausibility rather than accuracy” (Weick 1995: 17). The relation between these characteristics can be shortly summarized; “Once people begin to act (enactment), they generate tangible outcomes (cues), in some context (social), and this helps them discover (retrospect) what is occurring (ongoing), what needs to be explained (plausibility), and what should be done next (identity enhancement)” (Weick 1995: 55).

Identity and the interaction of establishment and maintenance of identity are considered to be core

elements of sensemaking. These core elements are therefore the main focus of this research, and will be elaborated upon further.

2.3 Identity

2.3.1 *What is identity?*

Identity is a constant changing creation, because a person will continuously try to develop and maintain this sense of self to fulfil three needs: the need for self-enhancement, the need for self-efficacy and the need for self-consistency. The need for self-enhancement relates to a need for “seeking and maintaining a positive cognitive and affective state about the self” (Erez and Earley 1993: 28). The motive of self-efficacy reflects “the desire to perceive oneself as competent and efficacious” (Erez and Earley 1993: 28). A desire or need for self-consistency is “the desire to sense and experience coherence and continuity” (Erez and Early 1993:28). The ongoing process of fulfilling the needs affects the sensemaking of the lives of individuals as well as in organizations. This is because the discrepant cues that are noticed are always related to the constant need of an individual to fulfil the needs of enhancement, efficacy and consistency of both the individual’s as well as the organization’s identity (Weick 1995). According to Albert et al. (2000: 14), identity “explains one means by which individuals act on behalf of the organization. They help to explain the direction and persistence of individual and more collective behaviors.”

The constant redefinition of identity and the role of sensemaking in this redefinition are reflected in the following citation: “Depending on who I am, my definition of what is ‘out there’ will also change. Whenever I define self, I define ‘it’, but to define it is also to define self. Once I know who I am then I know what is out there” (Weick 1995: 20).

The concept of organizational identity is, as is sensemaking, extensively studied. It has its roots in the exploration of identity at an individual level, especially within the field of psychology and social psychology. Later, identity became studied within groups, and eventually within an organizational context (Puusa 2006). Organizational identity is the representation of the form by which the members of the organization define themselves. It represents the definition of the members as a social group, in relation to their environment, and the definition of the members on how they see themselves different from their competitors. It is believed that the members shape the organizational identity, but, the identity is simultaneously shaping the organizational members (Alvesson and Empson 2008).

In this research both identities at an individual level as well as at an organizational level are of importance, because forest and nature areas can be owned and managed by both individuals and organizations. Essentially both kinds of identities reflect the same basic question: Who am I? The differences between individual identity and organizational identity lies in the ‘I’; this can refer to the individual or to the organization as a whole. Within this research the organizational identity is considered of most importance, because the actions of the organization are not considered to be the result of the sum of the individual identities, but of something more. And this ‘something more’ is expected to be reflected within the organizational identity. And just because the organizational identity is more, and even different, than the sums of its parts, some elaboration on the concept of organizational identity is needed.

Albert and Whetten (1985) wrote an article named ‘Organizational Identity’, with which the first formal theoretical statement on organizational identity was made. Albert and Whetten (1985) described organizational identity as: “that which is central, distinctive, and enduring about an organization” (Hatch and Schultz 2004: 3). Organizational identity is present when within an organization questions are being asked like: “Who are we?” and, “Who do we want to be?” (Hatch and Schultz 2004).

Though the work of Albert and Whetten (1985) has been very influential, scholars have challenged the definition as well. For example, a lack of consensus on the definition is originating from the idea that organizational identity is more “in flux and flow” within an organization (Jack and Lorbiecki 2007: 81). This flux and flow of identity can be seen in the descriptions of scholars on what organizational identity encompasses. Like Alvesson et al. (2008), who state: “For us, identity loosely refers to subjective meanings and experience” (Alvesson et al. 2008: 6). They also state: “(...) joining those who threat identity as a temporary, context-sensitive and evolving set of constructions, rather than a fixed and abiding essence” (Alvesson et al. 2008: 6). Oliver and Roos (2007) see organizational identity as

something that “develops through a process of negotiation and comparison with others” (Oliver and Roos 2007: 343).

Although organizational identity is thus nowadays considered to be more in flux and flow than the ‘enduring’ part of Albert and Whetten’s definition, the identity remains to have some stable core. Organizational identity is seen as something with a sense of continuity, as explained by Gioia et al. (2000): “The notion of an identity that is enduring implies that identity remains the same over time – that it has some permanency. An identity with a sense of continuity however, is one that shifts in its interpretation and meaning while retaining labels for ‘core’ beliefs and values that extend over time and context” (Gioia et al. 2000: 65).

The organizational identity is shaped and imputed from expressed values. Frequent redefinition and revision by the members of the organization, in an ongoing process of interaction with outsiders, make identity mutable. The durability of identity lies in the presence of the labels, but the interpretation of those values expressed is changeable and can vary depending on the context of the expression (Gioia et al. 2000).

2.3.2 *Identity and the relation with image*

The continuous process of interaction with others, like with the media, competitors or customers, is shaping identity and indicates the importance of the views or images those others have of the organization in question. Image is a broad concept, and something that can be projected as well as received, and, both internally as externally. Grunig (1993) demonstrates this by making a clear distinction between image “as something that a communicator creates – constructs and projects or gives to other people ... a message produced by the organization” and image wherein “receivers construct meaning – images – from their personal observations of reality or from the symbols given to them by other people ... image as some sort of composite in the minds of publics” (Grunig 1993:126).

The relationship between organizational identity and image is an important one, as image “often acts as a destabilizing force on identity, frequently requiring members to revisit and reconstruct their organizational sense of self” (Gioia et al. 2000: 67). The members of the organization compare their sense of self of the organization with the feedback given by outsiders of the organization. The members are sensitive to this feedback because they are not only a member of the organization, but they are also part of the external environment, as being part of the audience that receives portrayals of the organization. These portrayals are given by, for example, the media (Gioia et al. 2000).

The comparison occurs between questions of self-reflection and questions of other-reflection. Questions of self-reflection are: “Who are we?” and “Who do we want to be?” Gioia et al. (2000) state the self-reflective questions as: “Who do we think we are?” and “Who do we think we should be?” (Gioia et al. 2000: 69). Questions of other-reflection are: “Who do they think we are?” and “Who do they think we should be?” The comparison between the self-reflective questions and the other-reflective questions are thus a comparison between organizational identity and image, called construed external image. The construed external image is defined as the “organization members’ perceptions of how outsiders perceive the organization” (Gioia et al. 2000: 67). From the organizational members’ perspective it is thus the answer to the question: “Who are we, according to them?”

2.4 Sensemaking, identity, image and action: the conceptual framework

The concepts of sensemaking, identity, image and action together shape the framework on which this research rests. This framework is the result of the interrelationships between the different concepts.

Forest and nature owners need to operate within an existing environment of ‘givens.’ Every owner has to cope with these structures, imputed by, for example, the natural environment of the sites, the legislation present and the financial resources available. These elements influence the owner in its sensemaking process, and limit the actions that can be undertaken. Next to this, an owner is also influenced during the sensemaking process by societal actors and past experiences. The image an owner has of the perception of others and the owner’s interpretation of the past are used in the sensemaking process where the organizational identity is shaped, redefined and reconstructed. In fact, the organizational identity can be considered to constitute the core element of this process,

around which everything evolves. Action can be seen as a kind of ‘result’ of the sensemaking process although the identity and the process itself are, next to shaping, also being shaped by the action. In order to discover the diversity among the owners of forest and nature, as expressed by their actions, it is thus necessary to trace the diversity back to its core. And the fundament behind every action is this sense of self, the identity. The action are shaped by the identity, but identity is not the sole force acting upon the process in which action is shaped. To be able to explain the diversity; to know the different answers to the question “Why?”, it is also important to consider the concept of image. Most elements within the structures are completely clear to the owner; the natural setting, the laws and regulations to obey and the financial resources available are expected to be known. But, the idea others hold on the kind of owner he is, is his own perception. It is also this own perception the owner uses within his sensemaking process, and uses to define his ‘self.’ By using the concept of images it is thus possible to detect whether the diversity among forest owners is based on the identities, or whether it is based on images, and thus that there might only be a ‘perceived diversity’.

The conceptual framework of this research can be represented as done in figure 2.5. The conceptual framework indicates the way in which identity is shaped; within the environment of ‘givens’, the owner decides on a certain action by means of the sensemaking process in which the identity, and thus the image are embedded. This action is influential to the sensemaking process in turn as well, as it provides past experiences and is made sense of. The conceptual framework thus illustrates the way in which action comes into being and the way in which the concept of identity is involved in that.

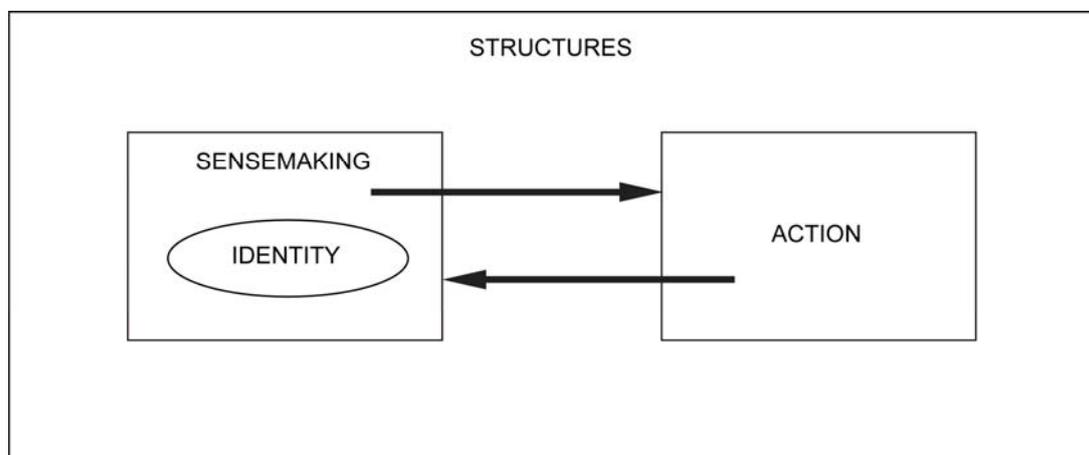


Figure 2.5 The conceptual framework

The aim of this chapter was to provide insight in the main concepts on which this research will rely in order to reach the objective and answer the research questions. Therefore, the process of sensemaking, its core element identity and the related concept of image are introduced within this chapter. These concepts and their relationships shape the conceptual framework. The framework will be used to reach the objective and answer the questions. The first and second research questions are related to the concept of identity. The third and fourth questions relate more to identity and image, and the relation between each other. But, as the conceptual framework already indicates; the relation between the concepts is strong and therefore the one cannot be considered without involving the other.

3 Methodology

3.1 Introduction

This chapter will explain how the concepts, as outlined in the theoretical framework, will be identified and assessed in an empirical way. The aim is to indicate how these concepts are used in the research in order to provide reliable, valid, and replicable results. In the second paragraph, the character of the research, a case study approach, will be outlined. The reasons for choosing this study design are also outlined. The third paragraph of this chapter deals with the method of data collection. In this part of the chapter it will be outlined how the data is collected, and why this method is chosen. The fourth paragraph outlines the method of data analysis used in order to gain the results of the research. The last paragraph considers the concepts of reliability and validity and the manner in which the concepts are taken into account within the research.

3.2 Study design

Social science research can be conducted in several ways, using methods like surveys or the analysis of archival information. This research is exploratory in nature and concerns the exploration of the processes involving action and identity of forest owners. These processes are best studied by using a qualitative approach, in which the focus lies on a smaller group.

Due to practical restrictions it is not possible to include all forest and nature owners within this research. Also, the social phenomena of interest is studied best when a thorough, in-depth analysis is possible. Therefore, forest and nature owners are studied by using a case-study design. This case-study method is especially suitable for studying a social phenomenon, as is the case here, by the thorough, in-depth, analysis of the individual case. The processes can only be detected by thorough analysis, but this also means that relatively little respondents can participate. This leads to a research in which only an exploration of the processes is possible; only a first insight in the social phenomena at stake.

The case of this research consists of a sample of Dutch forest and nature owners. This case is of special interest because of the multiplicity of owners of forest and nature in the Netherlands, and their seemingly diversity of management practices conducted. The case-study approach allows for an intensive analysis of the specific situation and its details. And this will result in a better understanding of how and why the action of forest owners comes into being. The case-study is also a helpful tool in indicating the needs for future research, because of its in-depth character, providing a thorough insight in the situation at hand.

3.3 Method of data collection

3.3.1 *Sample*

The Dutch forest and nature owners are selected from the enlisted owners at the Bosschap. The Bosschap is the industrial board for the Conservation of Forest and Nature. The Bosschap's task is to serve the communal interest of the forest and nature owners, being employers, employees or contractors. To the owners with over five hectares of woodland and/or nature the membership is mandatory. At the end of 2002 this led to a membership of about 1800 forest and nature owners. These owners represented about 270,000 hectares of woodland (Bosschap). Because the contact details of the possible participants are originating from the Bosschap, it is likely to assume that all the owners own more than five hectares of forest or nature area.

The enlisted forest and nature owners were selected on the basis of their characteristics. The aim was to reach as many seemingly different owners as possible within the time available. The owners were thus listed when they were expected by the Bosschap to be willing to cooperate, and if they represented part of the variety of the Dutch ownership structure. This resulted in a list of owners ranging from employees of large nature protection organizations, State Forest Service, Ministries and municipalities, but also smaller private forest owners and estate owners. Because the Dutch ownership structure seems so diverse, the aim was to interview the complete spectrum. The participants of the research are therefore not a complete random sample from the entire Dutch population of forest and nature owners, but a representation of the variety present.

The number of interviews

The list of contact details as provided by the Bosschap was very large. Therefore only those respondents who were reachable by public transport would qualify. The respondents then were approached in alphabetical order, by phone. But, this resulted in an initial non-response. It was therefore decided to contact only those owners with an e-mail address. The e-mail was considered less invasive, and allowed for a first contact to be made. This approach led to a higher initial response. In total 25 owners were emailed. The rate of response has also been influenced by the availability of the owners; it turned out that it was very difficult to schedule the interviews in the most efficient way, due to the busy schedules of the respondents and the time consuming activity of travelling towards the respondents. Some of the owners were only able to respond after the time available to do the interviews had passed. These obstacles resulted in a total number of ten interviews conducted.

The respondents

The ten respondents all own forest area. But, the amount of forest area owned differs greatly. This differentiation is related to the fact that both large national nature protection organizations, as well as smaller private forest owners participated. These private forest owners were also not in ownership of nature areas; the area they own consists entirely of forest (see also table 3.1).

Table 3.1 Characteristics of respondents

Name:	Area owned (hectare):	Area owned (type):
Estate owner	500	Forest and nature area
Kroondomeinen	10,400	Forest and nature area
Landscape Noord-Holland	3,300	Forest and nature area
Ministry of Defence	25,000	Forest and nature area
Municipality	1,280	Forest and nature area
Nature Monuments	100,000	Forest and nature area
Private forest owner (1)	20	Forest area
Private forest owner (2)	40	Forest area
Recreation Association	10,000	Forest and nature area
State Forest Service	250,000	Forest and nature area

Some of the respondents own areas spread over the country; namely the Ministry of Defence, Nature Monuments and the State Forest Service. Some respondents are only based within a specific province; Landscape Noord-Holland and the Recreation Association. The Recreation Association in this research is represented by the service responsible for the management of the areas owned by twelve recreation associations within the province of Zuid-Holland. Thus, the respondent is not the employee of an actual recreation association self, but responsible for carrying out the wishes of several recreation associations. Although this owner is thus bound to the client, the interview is considered to give valuable insight because of the level of freedom this service holds in the performance of the activities. The estate owner, the Kroondomeinen and the municipality are more locally based, but their local impact is greater than the impact of the private forest owners, because their areas are larger. The municipality has some of their areas led out on lease to a foundation called the Marke. Although the respondent of the municipality is responsible for the management of all areas, thus of the municipality as well as that of the Marke, the Marke decides on its own forest and nature management plans. In this research only the vision and the activities of the municipality itself is represented.

The estate owner is also a private forest owner. But, in this research a distinction is made between the estate owner on the one hand, and private forest owner (1) and private forest owner (2) on the other hand. This distinction is made in the way they are named within the research to indicate the difference in area owned. The estate owner owns a considerable large area than the other private forest owners do. Therefore, naming the estate owner private forest owner (3) would not do justice to the different characteristics they hold in terms of size.

3.3.2 Interviews

The owners, who are contacted and willing to cooperate, are interviewed in a face-to-face manner. By means of semi-structured interviews, the respondents (the sources of information) provide the data. The type of data necessary to answer the research questions can best be derived in a qualitative, interpretative way. The actual data then comprises of the interview transcripts. These transcripts are literal translations of the recorded interview.

Type of interviews

Interviews are advantageous for studying complex situations, as is the case in this research, because the interviewer has the possibility to prepare the respondent before asking sensitive questions or can explain questions to the respondents. In this research, in-depth information is required and interviews are especially suitable to obtain this kind of information. Additionally, next to the interview transcripts, information on the respondents can be supplemented by the researcher by observations on non-verbal communication. This allows for more detail and depth. Therefore, interviews are preferred over methods like questionnaire or observation.

The choice is made to maintain the character of the interview as open as possible. This choice is made because in this research the identity and the image are important. To gain insight in these concepts the overall impression of the answers given is important. The open interview is more suitable in obtaining information about perceptions, opinions and considerations than a closed interview is (Segers 1975). To, on forehand, restrict the possible answers would possibly lead to an incomplete insight in the identity and the image. The open interview also allows the researcher to make sure that the questions are understood well by the respondents, and also allows for additional explanation to be asked or given. Because the respondents is answering the questions as opposed to choosing a category, as done in closed interviews, the choice of words and non-verbal communication can supplement the researcher with additional information.

It is also expected that the open interview will increase the level of honesty of the respondents. They would not feel uncomfortable if an answer isn't provided in advance by means of categories. So, the respondents will not have any idea whether an answer is 'right' or 'wrong'. A disadvantage of the open interview would be the time consuming task of transcribing the interview recordings. Another disadvantage might be the reliability of the conclusions drawn based on the transcripts. The amount of interviews is smaller, because of the restricted time available to schedule them, the available time of the respondents, and the time needed to transcribe the recordings. These disadvantages are important, but this research is considered to be explorative in nature. The aim of the research is to provide insight, and is heavily restricted by the available time. The explorative nature and the small number of interview expected to be performed make the disadvantages of the open interview less relevant. But, it is important to mention that within future research a pursuit for a more quantitative research must be made.

In order to make sure that the research questions are answered, while the open character of the interview is maintained, an interview guide is designed. This interview guide is brought to every interview. The interview guide contains an overview of the research objective and the research questions, in order to be reminded not to deviate of the subject during the conversation. The interview guide is the main 'handbook' during the period in which the interviews are planned. Therefore, it contains a list with contact details of the respondents, and a detailed planning of the interviews.

The interview guide also contains a rough outline of the course of the interview. This is added to ensure that the information is gathered within the time available, and every respondent experiences the same type of interview concerning the structure. The open character needs to be maintained in order to be able to study the considerations of the owners as good as possible. Therefore, the interview guide contains the themes around which the research evolves (see also table 3.2).

Table 3.2 Themes

Theme:	Indicative questions:	Indicative subquestions:
I (present)	What kind of owner am I? Why?	How are your actions determined?
I (later)	What kind of owner do I want to be? Why?	How are your actions determined?
Them	What kind of owners are they? Why? What kind of owner do they want to be? Why?	How does that influence you?
Me	What do they think of you? Why?	How does that influence you?

These themes are related to the self-reflective and other-reflective questions as described within the theoretical framework. Within the guide some other questions are taken up as well, these questions

are used to, if necessary; bring the conversations back to the original themes, in cases the line of the conversation is appearing to deviate. The interview guide structures the interview, and is used to make sure that the same themes are discussed within each interview, increasing the comparability.

Structure and guidance

To ensure cooperation and to make the interviews as convenient as possible to the respondents, the choice has been made to provide, in advance, a maximum length of time in which the respondent's cooperation was wanted. By indicating that the interview would take a maximum of one hour, the respondents would be provided with the opportunity to schedule it more easily in their daily activities, thereby expecting to increase the response rate.

But, in order to be able to perform the interviews within the hour, they need some sort of structure and guidance. This guidance was necessary to make sure that the information needed to answer the research questions is dealt with within the time available. This structure explicitly aims at providing guidance, not to restrict the answers given by the respondents.

To detect the identities of the respondents, the activities within the field were considered important. As outlined in the theoretical framework, the activities of an owner are importantly shaped by the identity, but are also steering the identity. By investigating whether a certain action was undertaken, and for what reasons, insight can thus be gained about the identities. The activities are represented by measures, like the harvest of timber.

Interview instrument: cards

To gain insight in the measures taken by the forest and nature owners at their sites and to gain insight in their reasons for doing so, a basic categorization on forest and nature measures has been made. These measures were used as guiding and structuring elements during the interviews. The cards on which the actions were written would also provide an opportunity to stimulate the conversation if necessary. By using the same cards at every conversation, containing the descriptions of possible activities within the forest or nature area, the different interview transcripts would become more comparable as well.

To choose which measures would be put on the cards the *Book of Standards Nature, Forest and Landscape 2008* (in Dutch: *Normenboek Natuur, Bos en Landschap 2008*) provided the basis. This book contains the norms on time and costs of different management activities for terrain owners, therefore it is considered to be of importance in order to decide on strategic, tactically or operational actions. The *Book of Standards 2008* is developed by the research institute Alterra, in cooperation with the Boschap, the State Forest Service, the Dutch Society for the Preservation of Nature Monuments (in Dutch: *Natuurmonumenten*), the cooperative organization of The Landscapes (in Dutch: *De Landschappen*), and the Ministry of Agriculture, Nature and Food Quality (in Dutch: *Ministerie van Landbouw, Natuur en Voedselkwaliteit*). The support of the many organizations involved in developing the book indicate that the norms it contains are a reliable reflection of the forest and nature measures relevant to the field. The information extracted from the book was supplemented with information on forest and nature measures provided by the website composed by the *Government Service for Land and Water Management* (in Dutch: *Dienst Landelijk Gebied*). This website, called *Groenloket Gelderland*, also provided an extensive overview of actions a manager of forest or nature can choose from. In order to keep the number of cards limited, the various measures extracted from the sources have been reduced to a total number of eighteen. This reduction was possible because some descriptions of actions were overlapping or could be described using a common term.

The measures were also enlisted in the interview guide, together with a short explanation for each measure. This explanation was enlisted to ensure that whenever a respondent would ask for additional information about the measure on the cards, every respondent would get the same answer. Of course, this explanation could also been put on the cards. But the choice was made to not do so, in order to keep the cards as simple as possible. If, during the interview, the respondent answers in a way which indicates to the researcher that the measure is not fully understood, the same additional information is provided as well.

The measures as written on the cards are used to gain insight in the type of activities a respondent uses in the management of the area. Besides whether a certain measure is used, it is also of interest which considerations or reasons an owner has for choosing to perform or not to perform an activity.

The final list of forest and nature measures and a brief description is displayed in table 3.3.

Table 3.3 Forest and nature measures

To zone	To designate assigned areas with a level of recreational intensity by means of providing, for example, parking spaces, benches or tracks.
To install resting areas	On behalf of wildlife.
To manage paths and roads	To construct, remove, maintain or improve paths and roads.
To provide recreational facilities	To place, maintain or improve facilities like benches, picnic sets, hiking trails or information panels.
To manage cultural heritage	For example, lane patterns, hedges, pollard willow, ancient grave sites, coppice wood, an embankment, bulwark, fort or Celtic field.
Management of exotic or introduced species	By means of, for example, felling trees, thinning, the creation of clearings or, specific, the removal of <i>Prunus serotina</i> .
To leave dead animal bodies in the terrain	Deliberately leaving the dead animals in the area.
To manage forest edges	By means of, for example, the felling of trees, mowing, to sod, or the management of coppice wood.
To increase the amount of dead wood	By means of pulling down trees (lying dead wood) or girdling trees (standing dead wood).
To manage coppice wood	To maintain or create a specific habitat.
Timber harvest in rising forest	
To do nothing	
Conversion management	To converse an area with a former production function towards a more natural system, by means of, for example, creating clearings.
To till the soil	By means of, for example, fertilization, sowing or planting.
To remove unwanted vegetation	By means of, for example, the mowing and removal of grasses, herbage, reed or rough growth or the clearing of woody plants and vegetation other than exotic species.
Thinning (without harvest) in rising forest	To stimulate growth towards a certain stage or vision.
Management of heath land	By means of, for example, mowing, grazing, burning, or to sod the heath land.
To construct waterways or drainage	To increase or decrease the groundwater level of an area.

Therefore, for every measure the choice to perform or not to perform is questioned during the interview, as are the indications for making this choice. By clustering these considerations of the owners, it becomes evident whether owners make the same choices for the same reasons. But, even if the respondents choose to do, or not to do, something for a different reason, it provides insight in whether this reason is related to the identity of the owner or related to more practical considerations.

More practical considerations might be a lack of financial or human resources to perform a certain measure. If an owner does not perform a measure, but does indicate that it is planned in the near future, this is taken into account. The near future can be considered a difficult concept, especially within the field of forest and nature conservation. In this research it has a quite clear and practical meaning; if a measure is undertaken in the near future, this simply means (in this research) that the owner has specific and detailed plans for undertaking it and that it will be done as soon as possible.

Although every owner is dependent on, for instance, financial means or good weather, the owner must have a specific idea, if all goes well, how much time it will take to start. Shortly, the plan must be in place, ready to begin. Because this indicates that even if the measure is not performed (yet), the owner does have affiliation with the measure. Especially when the measure is planned in the near future, it is quite likely that the reasons for and considerations about the measure are evident to the owner. Therefore it is considered that these kinds of measures are also important in determining the differences among the owners and also gives an insight in their identities.

The different individual measures are aggregated to six themes (see appendix I). Each theme describes the overall aim or goal the individual measures represent. Aggregating the measures into themes allows for characteristics to be detected. These characteristics provide insight in the identities of the owners, and into the aspects in which they differ.

The first theme is 'recreation'. The measures related to this theme are all aimed at dealing with the visitors within the area. The second theme can be described by the expression 'cultural heritage'; the measures within this theme all relate to the preservation of elements of cultural heritage. This theme indicates the level to which cultural heritage is valued by the respondents. The third theme is 'nature orientation', this theme relates to the measures aimed at creating more natural systems. More natural in this respect means that natural processes like regeneration or degradation can occur, but 'nature oriented' also relates to the characteristics of the site. The nature, the character of Dutch nature, contains, logically, native species. This theme thus also relates to the measures aimed at disfavouing non-native species. The fourth theme is named 'timber production', as it is considered to hold measures which inform about the willingness of the respondents to gain income from their areas by means of timber harvest. The fifth theme can be described as: 'intensely managed habitats', this theme describes the measures necessary to maintain or create specific natural sites which only can be kept if intensive management practices occur, for instance, heath land or coppice wood only maintains its characteristics if management activities occur. Of course, if no management is practiced within a forest area, the forest would possibly gain other characteristics. Specific for this theme are the areas that would otherwise develop into a completely different nature type, like the transition of heath land into forest in time. The last theme relates to the willingness to actively stimulate the conversion of a site. This theme is called 'conversion'.

Forest and nature areas are part of a natural system, with processes involved. Thus, the different themes do not pretend to be exclusive; choices made within one theme might be related to different themes. But, it is expected that the themes do provide insight in the choices made by the owners related to some of the major issues within the field of forest and nature conservation and management, and therefore the division of themes is considered valuable.

The cards containing the measures provide valuable insight in the identities of the owners. But, to learn more about the image, another set of cards is designed. This second set of cards contains the names of the various (groups) of forest and nature owners in the Netherlands (see also table 3.4).

Table 3.4 Forest and nature owners

Group:
Estate owners
Kroondomeinen
Landscape Brabant
Landscape Drenthe
Landscape Flevoland
Landscape Friesland
Landscape Gelderland
Landscape Groningen
Landscape Limburg
Landscape Noord-Holland
Landscape Overijssel
Landscape Utrecht
Landscape Zeeland
Landscape Zuid-Holland
Ministry of Defence
Municipalities
National Park "De Hoge Veluwe"
Nature Monuments
Private forest owners
Recreation Association
State Forest Service

The cards contain a broad selection of the players within the field. And, by using these cards, the respondents will be asked about their opinion about all these owners. To them it would then be unknown which of these owners were actually participating in the research. This choice has been made in order to create a somewhat anonymous atmosphere. The respondents need to feel comfortable to express their opinions about others. Thus, by asking them their opinion about all, is considered to be less invasive as to ask their opinion about some of the respondents.

3.4 Data analysis

The recordings of the interviews are transcribed, by making word-to-word translations on to paper of the interview. The transcripts are analysed by using a content-analysis program, named MAXQDA. This content-analysis program allows the qualitative analysis of the answers by means of categories and helps to systematically evaluate and interpret texts. The interview transcripts are analysed by using a combination of a deductive and an inductive approach. The analysis is deductive in the sense that some categories are set in advance, by means of the measures on the cards. This deductive

element was necessary in order to make sure that the information necessary to be able to answer the set research questions was gained in the limited time available during the interviews. The measures on the cards can therefore be considered to be the first, but basic, categorization of action of forest and nature owners in the field.

Next to this deductive approach, a more inductive approach for analysis is used during the later stage of the research. Every text, every single transcript is read. If the respondent told something related to a certain measure, a category was made within the categories of the basic categorization. The inductive analysis thus results in the second order categorization. The next transcript could then provide the same answer, after which it was placed in the same category, or a different answer and a new (sub) category would be made. After all the transcripts were analysed in this way, the same procedure would be done again. Every transcript is read and evaluated again, in order to increase the reliability and validity of this process. For each category this provided insight about whether a certain owner would use a measure, and why or why not. Also the answers provided about the image of others were placed into categories, but more following the inductive approach, as no basic categorization was set for this concept.

An important part of this analysis is the interpretation. The actual transcripts provide insight, but the type of research requires that the little nuances and non-verbal communication are also involved. The use of the cards and the interview guide were making the research more quantitative, while the interpretation allows for more qualitative insights. Identity and image are both concepts in which interpretation, perception and feelings play a large part. Thus by using both a more quantitative as well as a more qualitative approach during the interviews, it is expected that the analysis is able to provide sufficient insight.

3.5 Reliability and validity

This research aims at making a valuable contribution to the knowledge on the forest and nature owners studied. But, in order to do so, the interviews must be as reliable and valid as possible. To increase the reliability and validity, several steps can be undertaken. Foremost, the quality of the interviews depends on the skills of the interviewer. To prepare for the interviews and to improve the skills, the researcher has used several sources of information on interview training, like books and internet sources. This is an addition to the basic interview knowledge and experience already present.

Another method to increase the reliability and validity is using a test interview. During the test interview the interview method is tested on comprehensibility for the respondents. The test interview also allows the researcher to judge whether the interview method is suitable for obtaining the information needed.

Because of the limited time available, the first interview is used as a test interview. During the interview the respondent was asked to indicate suggestions for improvements. The respondent was not able to indicate any suggestions. Therefore, during the second interview this question was asked again. Also, at this point no suggestions were made. Because the researcher felt the information obtained during these interviews was suitable, and would provide enough insight to answer the research questions, no adjustments were made. The first two interviews are therefore also part of the analysis.

4 Results

4.1 Introduction

This chapter will present the results of the research, based on the answers provided in the interviews performed. The analysis of these answers provides the information on which the conclusions about the identities of, and the differences between the respondents, are based. The first part of this chapter (§ 4.2 and § 4.3) will present the results related to the first and second research question. The second part of this chapter (§ 4.4) pays attention to the third and fourth research question. These results are the basis for the discussion and conclusion dealt with in chapter five. The last research question is related to the implications of the results, and will be discussed in the chapter five as well.

4.2 The measures

After analysis of the interview transcripts, the measures as written on the cards provided insight in the type of activities a respondent used in the management of the area. It is not only of importance whether a certain measure is used, but also the reasons for doing or not doing so. This part of chapter four will outline for each measure whether the owners use it, and their considerations. In the next paragraph the descriptions of the measures and the reasons are then analysed, and in that way provide the result on which the conclusion is based.

4.2.1 To zone

Using zones provides the forest and nature owners with an opportunity to choose where they want to host their visitors. This opportunity to steer the streams of visitors is used by all the respondents, and can be used for several purposes. The respondents indicated three reasons to zone, namely:

1. As an opportunity to deal with, to steer and to rearrange the inevitable presence of the public.
2. As an opportunity to alleviate pressure and disturbance of specific areas.
3. As an opportunity to lead the public to existing hot-spots and concentrate their presence (to alleviate pressure and disturbance of specific areas).

The measure already indicates that at some places visitors are less wanted. For example, an owner may choose to concentrate the activities of the visitors, and the related facilities, in a specific area as to mitigate vulnerable areas of high recreational pressure. To zone an area can also be done to discourage visitors completely. The areas are open to the public; but this public is not wanted everywhere. The visitors are expected, especially when present in large numbers, to disturb the quiet, to trample down parts of the area, invade privacy and even lead to additional costs. To these owners, zones give the opportunity to deal with, to steer and to rearrange the inevitable presence of the public (see also table 4.1).

Table 4.1 Reasons to zone

To zone:	Reasons:	Performed by:
1a	YES, as an opportunity to deal with, to steer and to rearrange the inevitable presence of the public.	Estate owner Private forest owner (1) Private forest owner (2)
1b	YES, as an opportunity to alleviate pressure and disturbance of specific areas.	Kroondomeinen Landscape Noord-Holland Ministry of Defence Municipality Nature Monuments Recreation Association State Forest Service
1c	YES, as an opportunity to lead the public to existing hot-spots and concentrate their presence (to alleviate pressure and disturbance of specific areas).	Kroondomeinen Ministry of Defence Municipality

This measure is also used to alleviate the pressure of certain parts of the area, and to retain the quietude. The Kroondomeinen, the Ministry of Defence and the municipality especially indicated that they make use of established recreational hot-spots. There the visitor intensity is high, as is the

presence of paths, benches, routes and litterbins. Because the visitors are concentrating in this part of the area, they are putting less pressure on the remainder of the natural sites.

Although the measure is thus used by all respondents, the reasons for doing so can be different. The zones can be installed with the visitors as starting point, with the aim to steer them, as done by the estate owner, private forest owner (1) and private forest owner (2). Or, the zones can be installed with the vulnerable areas as starting point, keeping the visitors out by concentrating them elsewhere, whether by using an existing hot-spot or otherwise, as done by the Kroondomeinen, Landscape Noord-Holland, Ministry of Defence, the Municipality, Nature Monuments, the Recreation Association and the State Forest Service.

4.2.2 To install resting areas

When considering a measure like the installation of resting areas for animals a slight distinction must be made. The respondents indicated one reason to install resting areas, namely to provide rest and quiet to wildlife and birds.

But, especially to forest and nature owners with smaller parcels or when the width of the site is smaller, this measure might be irrelevant. This was the case for two of the respondents, namely the municipality and private forest owner (1). This measure was also considered irrelevant to private forest owner (2), as it was indicated that no large wildlife (like roe or wild boar), or populations (of breeding) birds were present in the area (see also figure 4.1).

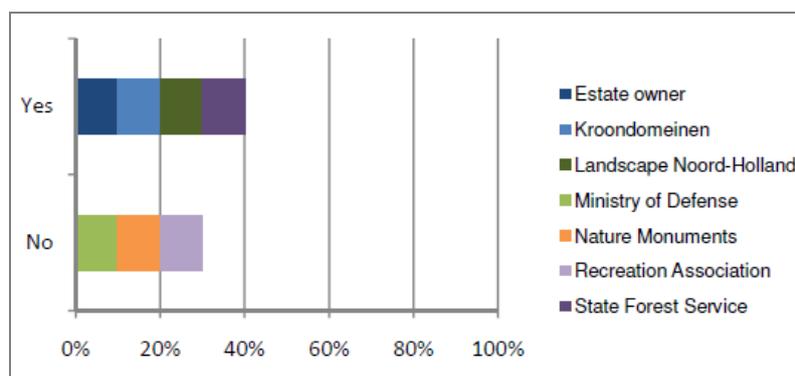


Figure 4.1 To install resting areas

The remaining owners choose in four instances to use this measure. The felt need to provide the wildlife with resting areas is considered a consequence of the visitor intensity, and thus disturbance intensity, present. Those owners who did not install a resting area, mentioned two reasons (see also table 4.2):

1. Designating resting areas is unnecessary because the area is large enough to provide sufficient rest and quiet to the wildlife.
2. Designating resting areas is unwanted because it restricts admittance of the public.

Table 4.2 Reasons to install resting areas

To install resting areas:	Reasons:	Provided by:
2a	YES, to provide rest and quiet to wildlife or birds.	Estate owner Kroondomeinen Landscape Noord-Holland State Forest Service
2b	NO, the areas are considered large enough to provide the animals with sufficient rest and quietness.	Ministry of Defence Nature Monuments
2c	NO, rather use zoning then completely restrict admittance.	Recreation Association
2d	NO, not relevant.	Municipality Private forest owner (1) Private forest owner (2)

The Kroondomeinen indicated that a resting area was installed to make sure that visitors do not scare away deer from the heath land. Therefore it was decided upon that no admittance by people was allowed within that area, but people were allowed to walk round the heath land. So, in that sense a resting area for, especially, deer was installed in order to make sure that visitors could still enjoy their sight at the heath land. The Kroondomeinen also indicated that in the forest, although some resting areas are present, essentially the forest parcels are large enough to provide the animals with sufficient quietness. Still, resting areas for quiet and rest of wildlife are present in the area of Kroondomeinen.

For Nature Monuments and the Ministry of Defence the size of the parcels is also the reason for not installing resting areas. The parcels are, in their opinion, large enough to provide a place where the wildlife can retreat. The Ministry of Defence also indicated that, in their case, the military function of the areas leads to little disturbance by people in some parts of such an area. In those cases, the low disturbance frequency also makes the installation of resting areas unnecessary.

The Recreation Association indicated that no resting areas are designated because their focus lies with open air recreation. Therefore, they prefer to choose to zone an area rather than placing signs that restrict admittance. The Recreation Association uses the placing of paths and roads to spare vulnerable areas.

4.2.3 To manage paths and roads

The construction, removal, maintenance or improvement of paths and roads is, essentially, done by all of the respondents. But, the Ministry of Defence indicated that their paths and roads are only managed for military purposes. Various paths and roads for visitors are present in the areas indeed. But, the management of, for instance, a bride trail is done by a horse riding association. In this sense, the Ministry of Defence allows and provides the visitor with various recreational possibilities; hiking, cycling or horse riding, but does not manage the paths themselves for that purpose. So, when considering the management of paths and roads for recreational purposes, the Ministry of Defence forms an exception (see also figure 4.2).

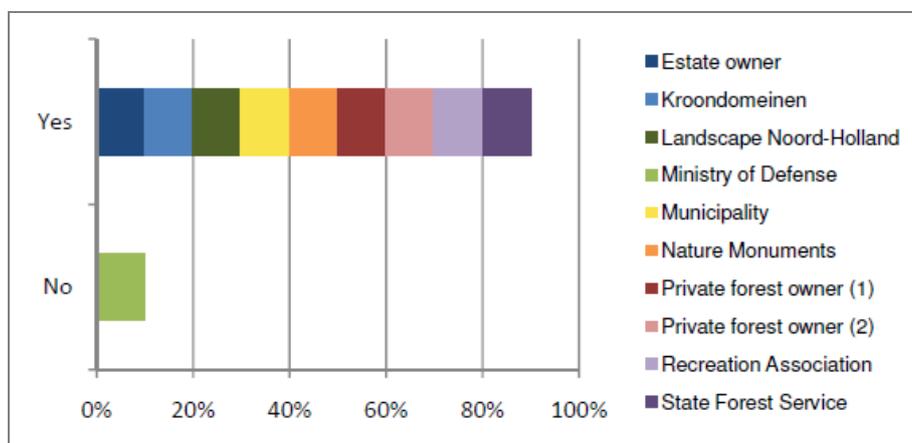


Figure 4.2 To manage paths and roads

Although all of the other owners manage their paths, the intensity in which they do so, within their own areas but also in relation to each other, varies. This intensity is related to another measure; to zone. The management of the paths is, logically, more intense at those places that are more frequently visited. For instance, both the estate owner as well as the Kroondomeinen indicated that the management of the paths within the so called park forest is much more intense than within the other areas. Except for the private forest owners, all respondents provided opportunities to both hike as well as cycle within their areas.

Any difference among the forest and nature owners can be found in the extent to which they provide other possibilities. A more active form of the management of paths and roads is, for example, to construct a special ATB-trail, or to construct a path especially for disabled persons. In this sense some owners do distinguish themselves. The Ministry of Defence allows for the construction of such an ATB-trail if installed and maintained by an external organization. The Municipality, Nature Monuments, the

Recreation Association and the State Forest Service all provide visitors with a special ATB-trail. Private forest owner (2) does not have a specific trail for ATB activities, but does allow the local ATB-association to cycle in the area at some occasions, but only once or twice a year.

To install a path for disabled persons within the natural area requires more management, as does the ATB-trail, than 'normal' paths. To create and maintain a path for disabled persons is thus also an indication of the intensity of the management of paths and roads. Parts of estates and park forests are considered to be more accessible for disabled persons or persons in a wheelchair by its less natural characteristics. Interesting in this respect are the paths for disabled persons within a more rough terrain; a natural area or a forest. Such a path is managed by four of the respondents, namely; Landscape Noord-Holland, Nature Monuments, Recreation Association and the State Forest Service (see also table 4.3).

Table 4.3 Extent of management of paths and roads

To manage paths and roads:	Extent:	Provided by:
3a	The provision of a path for disabled persons.	Landscape Noord-Holland Nature Monuments Recreation Association State Forest Service
3b	The provision of a path for mountainbikers.	Ministry of Defence Municipality Nature Monuments Recreation Association State Forest Service
3c	Only providing opportunities to walk.	Private forest owner (1) Private forest owner (2)
3d	Explicitly making a division between park forest and other forest area in management intensity.	Estate owner Kroondomeinen

4.2.4 To provide recreational facilities

Strongly related to the previous three measures is the measure to provide recreational facilities, like benches, picnic sets, hiking trails or information panels. The level in which such recreational facilities are provided is considered an indication of the level in which the owner feels the responsibility to provide for its visitors. To provide a certain level of recreational facilities is also an indication of the kind of visitors an owner wants to attract or to put off. Different types of recreational facilities are assumed to attract different kinds of visitors. To provide recreational facilities is a measure which is done by all the respondents, but the degree to which such facilities are provided varies strongly (see also figure 4.3).

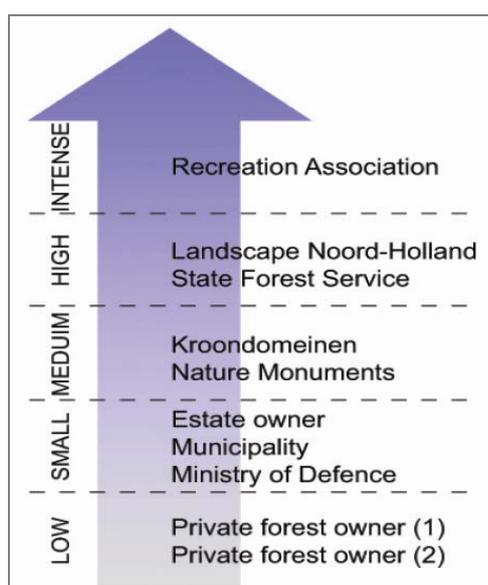


Figure 4.3 Level of provision of recreational facilities

The Recreation Association is, as its name suggests, most active and provides the most types of facilities, ranging from benches and playing facilities for children, to camping sites and playing fields. Landscape Noord-Holland and the State Forest Service also actively provide recreational facilities, ranging from observation towers, visiting centres or excursions, to picnic sets and benches. Landscape Noord-Holland and the State Forest Service additionally indicate that the provision of recreation facilities is important to them, and that they value the visitors highly. Nature Monuments and the Kroondomeinen also provide the visitor with a centre (in the case of the Kroondomeinen especially related to the presence of the palace), hiking routes and excursions, but they both strongly indicate that within the less cultural and historical parts of their area the intensity of benches or bins is consciously kept low, in order not to disturb the view. The municipality provides its visitors with some recreational facilities, namely hiking routes, and some benches and picnic sets. They also indicate that no active extension of those facilities is sought. The visitors do not show the wish for more

facilities, and the municipality tries to leave the expansion of the facilities on to the initiative of others, like the Dutch Tourist Association (in Dutch: VVV), or the Royal Dutch Tourism Association (in Dutch: ANWB).

The estate owner provides the visitors in the park forest with facilities like benches, but within the remainder of the area such facilities are scarcer. The two routes for hikers that are present are not the result of an initiative by the estate owner; this was imposed by the local municipality. However, the estate owner does plan to set up an educational centre and routes in the near future. The Ministry of Defence does not provide any recreational facilities, only allows associations to install and maintain initiatives. But, the Ministry is increasingly working on the provision of information panels within the area or at the borders of areas. These information panels then explicitly highlight the elements of cultural heritage within an area.

The two private forest owners are the least active in the provision of recreational facilities. Benches or routes are not present, nor are information panels. The reason not to provide facilities is to maintain the peace and quietness within the area, and thus not to stimulate the visitors in any way. People visiting the area to make a walk are welcome, but they are not provided with any facilities.

4.2.5 To manage cultural heritage

All of the respondents indicate that they value their cultural heritage highly. This is also shown in their management; every owner carries out activities related to the preservation of their cultural heritage. Of course, the presence of elements of culture heritage, or the 'amount', varies.

For the private forest owners this means the maintenance and preservation of a lane, or the preservation of the forest as a whole because of its value to the cultural history of a landscape or the region. The Recreation Association also indicates that elements of cultural heritage are present, but not common. The elements they do have are being preserved; restoration of elements can be considered an exception. The State Forest Service in turn indicates that cultural heritage is highly valued, but a lack of means restricts them in their activities. But, the State Forest Service is actively searching for cooperation with other organizations to restore and preserve such elements.

4.2.6 To manage coppice wood

A specific element of cultural heritage is the management of coppice wood. Not to all respondents managing coppice wood is relevant; the private forest owners do not have such a site in their areas. The municipality does not manage coppice wood, because that part of the forest area is managed by the Marke (see also figure 4.4).

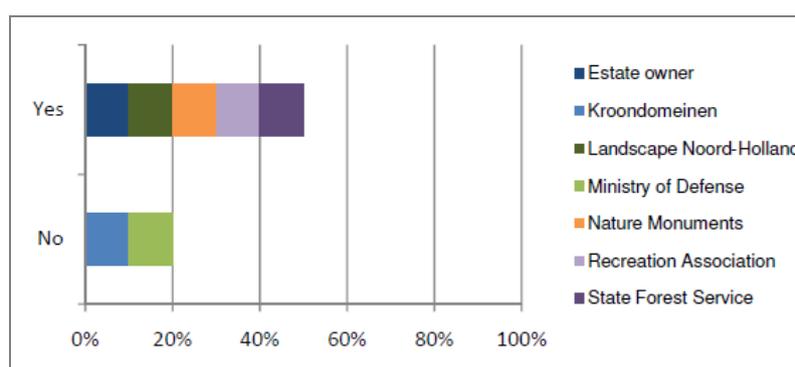


Figure 4.4 To manage coppice wood

Coppice wood is managed for several reasons, not just because of the historical element; it can also be managed because of the diversity it creates in the overall landscape, or because specific species of flora and fauna are attracted by it. To manage coppice wood can also be part of an overall management of forest edges, this measure will be discussed later.

Management of coppice wood because of its value for culture heritage is specifically done by the estate owner, Landscape Noord-Holland, Nature Monuments, State Forest Service and the Recreation

Association. But, these owners also indicate the value of the coppice wood for specific species, especially Nature Monuments, and the diversity it provides within the forest system.

The Ministry of Defence and Kroondomeinen provide the exceptions to this measure; Kroondomeinen indicated that management of coppice wood was found to be very difficult. They've tried it, but the deer would instantly eat it. The only way the coppice wood could be managed was by fencing the area. Kroondomeinen considered this to force the matter too much, and decided not to go on with the management of coppice wood. The Ministry of Defence indicated that the amount of value added of the presence of coppice wood in the system was not yet clear. The discussion is still ongoing, so no explicit management of coppice wood is set. Occasionally, some coppice wood is managed during thinning activities, but this is not common practice; in most cases no management of this kind occurs. Both the Kroondomeinen and the Ministry of Defence are not valuing the presence of coppice wood high enough in order to be willing to put the necessary large effort in it in order to maintain this habitat type (see also table 4.4).

Table 4.4 Reasons to manage coppice wood

To manage coppice wood:	Reasons:	Provided by:
6a	YES, to create a highly valued habitat and to preserve cultural heritage.	Estate owner Landscape Noord-Holland Nature Monuments Recreation Association State Forest Service
6b	NO, not willing to put in the necessary effort necessary to maintain the coppice wood.	Kroondomeinen Ministry of Defence
6c	NO, not relevant.	Municipality Private forest owner (1) Private forest owner (2)

4.2.7 Management of heath land

All respondents who own heath land manage it. This is quite logic; if the heath land wouldn't be managed, it would disappear. The two private forest owners do not have any heath land, although private forest owner (2) hopes to be able to create an area at some time in the future, this will depend on the financial opportunities present and the possible cooperation with other organizations whether this will succeed (see also table 4.5).

Table 4.5 Reasons to manage heath land

To manage heath land:	Reasons:	Provided by:
7a	YES, to maintain a habitat which is highly valued as cultural heritage and for its value for nature.	Estate owner Kroondomeinen Landscape Noord-Holland Ministry of Defence Municipality Nature Monuments Recreation Association State Forest Service
7b	NO, not relevant.	Private forest owner (1) Private forest owner (2)

Both Landscape Noord-Holland and the Recreation Association indicate that the amount of heath land area is fairly small. Interesting about this measure would be the reasons for preserving the heath land and the extent to which the heath land is managed, the intensity. The Ministry of Defence is the only owner who still uses a fire regime to manage the heath land at some places. But, in general, the respondents seem to fairly use the same activities of management; to mow, to sod and to remove trees is common practice. None of the owners would want to let the heath land disappear. To all of them the aim to maintain the heath land is because of the natural value and because it is part of the cultural heritage. The natural value of the heath land is considered to be high because of the specific species it attracts and the diversity it brings to the landscape.

4.2.8 Management of exotic or introduced species

The management of exotic or introduced species can involve felling of trees, thinning, the creation of clearings or, specific, the removal of *Prunus serotina*. This measure may be used by forest and nature owners to improve or to create a more natural composition of species in their areas. Not all respondents feel this need (see also figure 4.5).

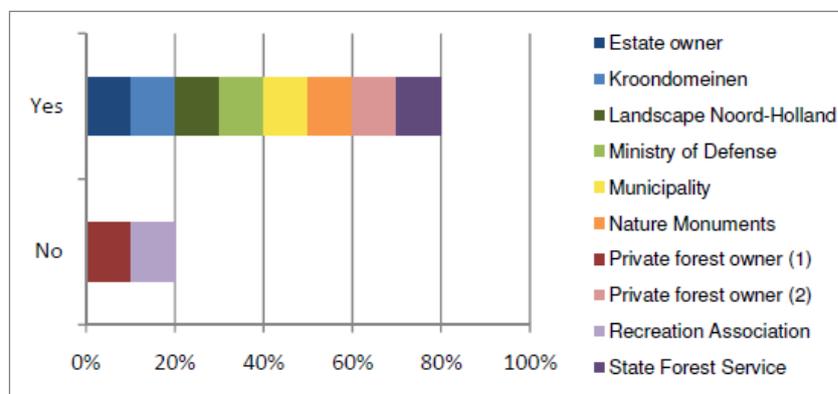


Figure 4.5 Management of exotic or introduced species

The Recreation Association and private forest owner (1) do not remove exotic or introduced species from their natural sites. They value those species and do not see any need to remove them. When not considering the removal of *Prunus serotina*, some remarks can be made. The Kroondomeinen can be considered to have been the most active respondent in relation to this management. There it is set that within 80% of the forest area, no exotic species are allowed. The Kroondomeinen has reached this goal, and is now only active in maintaining this situation, and therefore is considered to be moderately active using this measure.

The other respondents all also practice this measure actively, but not to the same extent. Especially the estate owner only occasionally removes trees; in general the exotic trees are highly valued as well. Landscape Noord-Holland, the Ministry of Defence, the municipality, Nature Monuments and the State Forest Service do practice management of exotic or introduced species, but the overall tendency seems to not pursue it excessively. The wish for a native species composition is also only present in those areas that do not have any historical significance, as related to cultural heritage. At estates or park forests a diverse species composition, with variation in native and non-native species, is pursued; so, in those places the exotic species are valued.

The removal of trees often only occurs when species seem to be dominant or aggressive, in other cases, often, the species or trees are removed when, for example, simultaneously other activities are performed in the forest stand. As the Kroondomeinen currently, they all are moderately active in their management of exotic or introduced species (see also table 4.6).

Table 4.6 Extent of management of exotic or introduced species

To manage exotic species:	Extent:	Provided by:
8a	YES, similar level: moderately active.	Kroondomeinen Landscape Noord-Holland Ministry of Defence Municipality Nature Monuments State Forest Service
8b	YES, similar level: little active.	Estate owner Private forest owner (2)
8c	NO, no management of exotic or introduced species; removal is unwanted.	Private forest owner (1) Recreation Association

The removal of *Prunus serotina* is actively done by all owners who practice exotic species management. Private forest owner (2) and the estate owner do actively remove *Prunus serotina*, but are much less active in the removal of any other exotic species. At the forest area of private forest

owner (2) occasionally a dominant or aggressive Northern Red Oak, *Quercus rubra*, is ringbarked and left to simultaneously increase the amount of dead wood in the forest. In general, exotic or introduced species are highly valued by this owner; in the area many exotic species can be found, like; Pin Oak (*Quercus palustris*), Turkey Oak or Turkish Oak (*Quercus cerris*) and Dawn Redwood (*Metasequoia glyptostroboides*).

4.2.9 To leave dead animal bodies in the terrain

To pursue to leave dead animals (of larger wildlife like deer or wild boar) in the terrain can be done in order to make the area more natural. As leaving dead or dying trees standing or lying, the dead bodies could attract certain species. Not to all respondents this measure is relevant. The private forest owners and the Recreation Association are not confronted with larger wildlife present (see also figure 4.6).

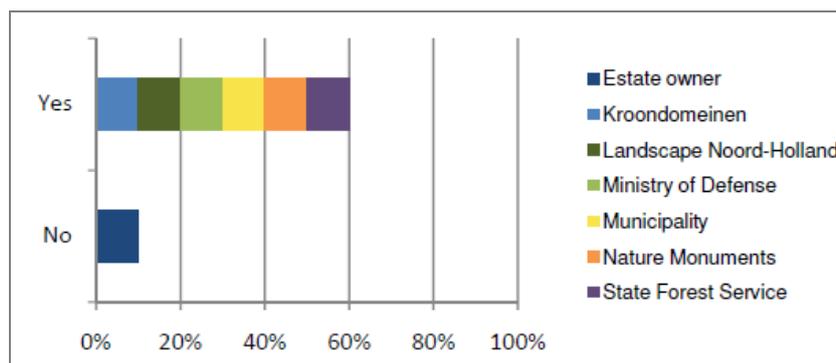


Figure 4.6 To leave dead animal bodies in the terrain

To the estate owner it has been a conscious choice not to leave the dead animals. To the estate, the let of the hunt and the sell of the hunting proceedings are a source of income. Of course, it is likely to assume that animals also die in the area and aren't noticed, so dead animal bodies are present. But in this case the owner does not want to leave any dead animals in the area, shot by hunters. The other owners do leave, to some extent, dead animal bodies in the terrain. Most of the owners do practice a hunting regime, and thus the dead animals are explicitly left by the hunters in the area. These owners indicate that the dead animals supply an added value to the areas. The extent to which dead animals (can) be left in the area is dependent on practical considerations, like the area size, the wildlife present and the need to generate income from hunting (see also table 4.7).

Table 4.7 Reasons to leave dead animal bodies in the terrain

To leave dead animal bodies:	Reasons:	Provided by:
9a	YES, in order to stimulate natural processes.	Kroondomeinen Landscape Noord-Holland Ministry of Defence Municipality Nature Monuments State Forest Service
9b	NO, dead animals are used to generate income.	Estate owner
9c	NO, not relevant.	Private forest owner (1) Private forest owner (2) Recreation Association

The Kroondomeinen sells most of their hunting proceeds, in order to generate necessary income, but animals that can't be sold are left in the area. The Ministry of Defence does practice a hunting regime in some areas, but not in all, and even in those areas (parts) of the dead animals are left to stimulate natural processes. An important restriction to them is the presence of military personnel in the terrains. Dead animals are only left if this is compatible with their military function. To Landscape Noord-Holland this measure is still a process, in which the employees are stimulated to leave the animal bodies. Nature Monuments is in this case the most active pursuer of this measure; to be able to study the processes involved, they currently activate to leave the bodies also in sight, closer to paths and roads if such a situation may occur, but this is till now not common policy yet within the organisation.

4.2.10 To manage forest edges

Forest edges can be managed by means of, for example, the felling of trees, mowing, to sod or the management of coppice wood. This measure is chosen with the idea to create a more natural system, both in species composition as well as in visual composition.

This measure is not relevant to private forest owner (2), the area owned is completely surrounded by other forests, so no edges to be found. Only private forest owner (1) chooses not to perform this measure. The removal of trees in order to stimulate brushwood would mean that a part of the forest would no longer be useful for the production of timber. The forest area of the private forest owner (1) is long and narrow, and to converse this timber producing forest would diminish the yield and change the character of the forest and its appearance substantially (see also figure 4.7).



Figure 4.7 To manage forest edges

The Recreation Association proves a different story; in fact, forest edges are managed to become more gradual and phased down. But, in the model they use as the basis for their management activities, this measure is not included. If management on forest edges occurs, they divide the edge into different measures, with the aim to create a gradual forest edge.

For the respondents this measure is a means to create a more natural system. The Kroondomeinen also mentions that the management of forest edges makes the edges more friendly and soft in comparison to the landscape; the sharp silvicultural edges are no longer preferred. The municipality also explicitly mentions that this measure stimulates the presence of a butterfly; the Purple Hairstreak, *Neozephyrus quercus* (in Dutch: eikenpage). The name of the butterfly already indicates that the coppice of wood of oak, *Quercus*, is done with this goal in mind. Nature Monuments also indicates that the gradual forest edges are also preferred because of the attraction it has on certain, specific, species (see also table 4.8).

Table 4.8 Reasons to manage forest edges

To manage forest edges:	Reasons:	Provided by:
10a	YES, to create a more natural system, both within the landscape sight as well as to attract specific species.	Estate owner Kroondomeinen Landscape Noord-Holland Ministry of Defence Municipality Nature Monuments Recreation Association State Forest Service
10b	NO, the forest area is too narrow.	Private forest owner (1)
10c	NO, not relevant.	Private forest owner (2)

4.2.11 To increase the amount of dead wood

Actively increasing the amount of dead wood in a forest is done by the respondents to stimulate certain species and to increase the naturalness of an area. The amount of dead wood is increased by pulling down trees; to increase the amount of lying dead wood, or by ringbarking trees; to increase the amount of standing dead wood. These activities are performed by most of the respondents (see also figure 4.8).

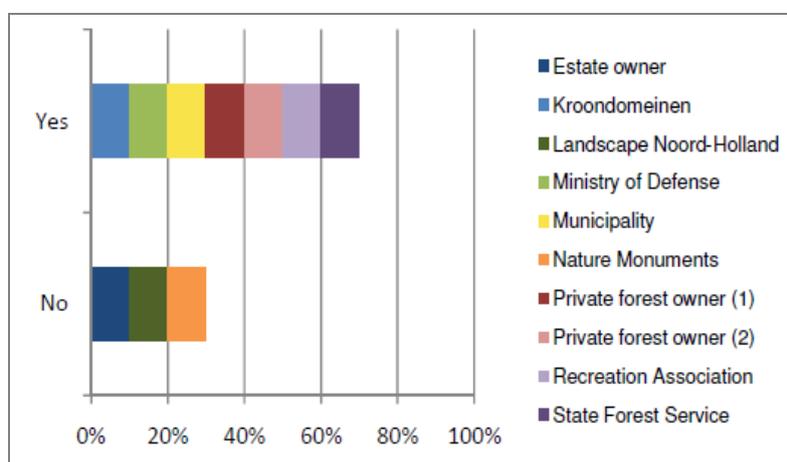


Figure 4.8 To increase the amount of dead wood

But, the municipality and private forest owner (1) do indicate that this measure is only recently in place, and that the activity of increasing the amount of dead wood will be more and more intensely used in the future.

The intensity in which this measure is used varies among the respondents as well as within their area owned. Although these owners do value the presence of dead wood highly, in their reserves no active attempts are made, neither often in forest with a specific production function. Actively increasing the amount of dead wood is primarily done in the remaining forest area. Private forest owner (2) indicates that to increase the amount of dead wood a balance is sought between having dead wood in the forest and losing timber production possibilities. Therefore, in this case, only exotic trees which are dominating or aggressive are ringbarked and 'used' as dead wood. So, to increase the amount of dead wood becomes only interesting to this owner when no income can be generated from it (see also table 4.9).

Table 4.9 Reasons to increase the amount of dead wood

To increase the amount of dead wood:	Reasons:	Provided by:
11a	YES, but only started recently.	Municipality Private forest owner (1)
11b	YES, to increase the naturalness of the area and to stimulate species.	Kroondomeinen Ministry of Defence Municipality Private forest owner (1) Recreation Association State Forest Service
11c	NO, dead wood will become present in time.	Landscape Noord-Holland Nature Monuments
11d	NO, possible gains of the wood is considered to have priority.	Estate owner Private forest owner (2)

Interesting are the respondents who do not actively increase the amount of dead wood; the estate owner, Landscape Noord-Holland and Nature Monuments. Both Landscape Noord-Holland and Nature Monuments do value a certain amount of dead wood in their areas, but they do not wish to actively increase it. They believe this to be unnecessary because the forest will produce its own dead wood in time. Nature Monuments though, does use trees near paths that need to be cut anyway to increase the amount of dead wood there.

The estate owner has made a different choice. In the area of the estate owner dead wood is present, but hardly any activities are in place to increase the amount. For instance, the dead wood that occurred after the storm in January 2007 is all removed. For the estate owner, such dead wood can be sold, and provides income. To leave or to actively stimulate dead wood in the forest is therefore considered a loss. Dead wood is only present when it concerns timber that can't be sold. In that sense, the estate owner and private forest owner (2) show the same considerations in managing the dead wood amount in the forest; possible income generated by the timber is considered most important. Dead wood is present in their areas, but only as the result of no other uses of the timber available.

4.2.12 To do nothing

To do nothing in an area; it may seem strange to consider this a measure; rather a lack of measures. But to do nothing requires an active choice to be made by an owner, with larger consequences. To do nothing would only succeed as a means if installed for a long period of time. Therefore, if chosen to pursue or to not pursue, this measure can give valuable insight in the views and considerations of forest and nature owners. This measure is performed by most of the respondents (see also figure 4.9).

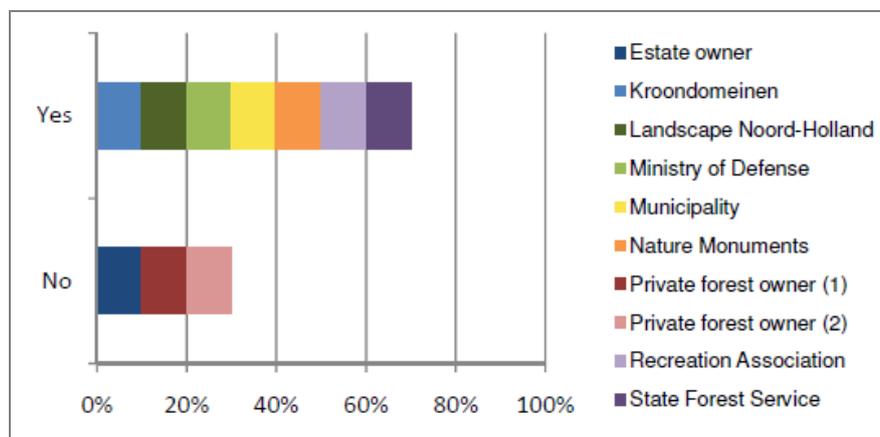


Figure 4.9 To do nothing

In this case, it seems that the choice to do nothing is heavily restricted by practical considerations. The estate owner and the private forest owners all indicate that such a measure is not viable to them. To do nothing in the forest would destroy their means of income greatly; if no timber is to be harvested, no income is earned. The estate owner additionally indicated that various rules, regulations and responsibilities also prevent them from doing nothing in their area. For instance, because visitors are allowed, and paths and roads are present, the owner needs to fulfil the duty to provide for a safe surrounding for the visitors. This means, for example, that dead branches need to be removed.

Table 4.10 Reasons to do nothing

To do nothing:	Reasons:	Provided by:
12a	YES, in subareas, to enable natural processes to occur, to stimulate species or biodiversity and to monitor and provide insight in the processes and 'results' in order to create a better understanding of natural systems.	Kroondomeinen Landscape Noord-Holland Ministry of Defence Municipality Nature Monuments State Forest Service
12b	YES, but no conscious decision.	Recreation Association
12c	NO, restricted by rules and regulations and would diminish income possibilities.	Estate owner Private forest owner (1) Private forest owner (2)

The other respondents all indicated that doing nothing is something to pursue (see also table 4.10). Only the Recreation Association indicated that it is has often not been a conscious choice to do nothing. In their case it also occurred that nothing is done because of limitations in means or because of restrictions in the areas (difficult to reach).

The municipality is the only respondent without any reserves in place. They are still in the process of converting their forests into more natural settings. At some places, no management occurs, but they expect this area to increase substantially over the years to come. Kroondomeinen, Landscape Noord-Holland, Ministry of Defence, Nature Monuments and the State Forest Service all have some reserves. In these reserves nothing is done. This measure is pursued to enable natural processes to occur, to stimulate species or biodiversity and to monitor and provide insight in the processes and 'results' in order to create a better understanding of natural systems.

The Ministry of Defence also owns an area, besides their reserve, where nothing is done, but because of more practical considerations. This concerns the centre of a shooting area, which is considered to be unsafe during most of the year. Only two weeks a year this area is accessible for management, and then there is only enough time to work on activities regarding fire prevention. In reality, this means that this area also is unmanaged.

4.2.13 Thinning (without harvest) in rising forest and timber harvest in rising forest

Thinning in the forest without any harvest can be done for several reasons. Of course, every thinning would generate wood, but with this measure the thinning is done for other reasons than to sell the wood. No thinning at all occurs at the areas of Landscape Noord-Holland. The respondents who do thin without harvest (see also figure 4.10); Nature Monuments, Ministry of Defence and the Recreation Association, do this in order to reach certain goals within the area, like to increase or preserve a certain level of natural values.

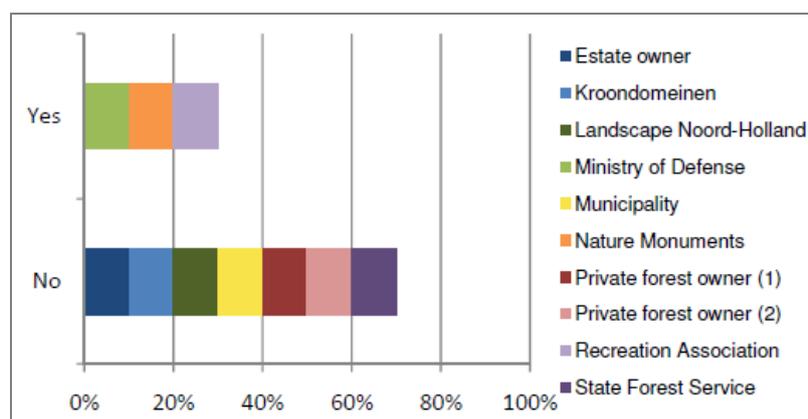


Figure 4.10 Thinning (without harvest) in rising forest

The other owners do not perform thinning without selling the harvest. The thinning occurs because it generates income and is expected to stimulate timber harvest later. The owners also indicate that the thinning helps to reach certain goals within their forest, like species composition or tree structures. But, they do not see the point in not selling the yields (see also table 4.11).

Table 4.11 Reasons to thin (without harvest) in rising forest

Thinning (without harvest):	Reasons:	Provided by:
13a	YES, to reach specific goals within an area, like natural values.	Ministry of Defence Nature Monuments Recreation Association
13b	NO, no thinning at all.	Landscape Noord-Holland
13c	NO, only thinning with harvest to provide income and in order to stimulate future timber harvest, or to reach specific goals.	Estate owner Kroondomeinen Municipality Private forest owner (1) Private forest owner (2) State Forest Service

To those owners, this measure is thus highly related to the harvest of timber. The Recreation Association does not harvest any timber which is sold. They indicated that this possibility is not yet in place within the organization as a means to lower management costs. There is a lack of recognition of

this measure. The Landscape Noord-Holland and the Ministry of Defence do not harvest any timber (for selling purposes) as well.

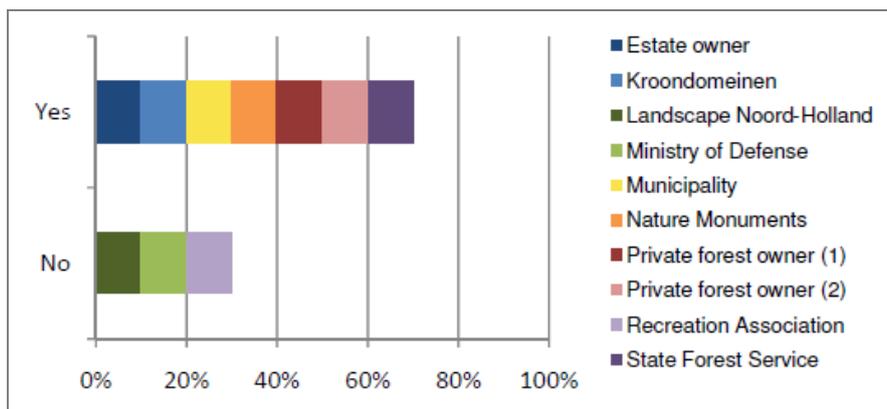


Figure 4.11 Timber harvest in rising forest

They indicated that this is not compatible with their nature-oriented goals for the areas. The Kroondomeinen, municipality, Nature Monuments and State Forest Service, do harvest timber (see also figure 4.11). They generate income by that, but only in selected parts of their areas, dedicated to (partly) the production of timber. If trees are harvested in other parts, this is done to reach certain nature oriented goals, like a more natural or dynamic forest composition. The estate owner and the private forest owners use their timber harvest particularly to generate income, and their complete forest areas are therefore to some extent dedicated to production (see also table 4.12).

The Ministry of Defence, the Recreation Association and Nature Monuments, when considering the natural or semi-natural areas of Nature Monuments, both use thinning and harvest to reach their vision on a certain area, the harvest timber is then, for instance, left in the area. But, in most cases thinning is used to stimulate the forest and production and both thinning and harvest are generating income.

Table 4.12 Reasons to harvest timber in rising forest

To harvest timber:	Reasons:	Provided by:
14a	YES, explicitly to generate income, harvest within whole area.	Estate owner Private forest owner (1) Private forest owner (2)
14b	YES, to reach specific goals and to generate income, timber harvest in selected areas.	Kroondomeinen Municipality Nature Monuments State Forest Service
14c	NO, not compatible with nature-oriented vision.	Landscape Noord-Holland Ministry of Defence

4.2.14 To remove unwanted vegetation

Most of the respondents do remove vegetation they consider unwanted. The removal of unwanted vegetation can be done by means of, for example, the mowing and removal of grasses, herbage, reed or rough growth or the clearing of woody plants and vegetation. In this case, unwanted vegetation is not considered to consist of exotic or introduced species or as part of the management of heath land.

To the Kroondomeinen, the municipality and private forest owner (2) the only unwanted vegetation is *Prunus serotina*, which is considered in the measure of managing exotic or introduced species. Also the Ministry of Defence indicated that primarily *Prunus serotina* is removed as unwanted vegetation. Additionally, it was indicated that sometimes vegetation is removed when the presence is incompatible with the military activities.

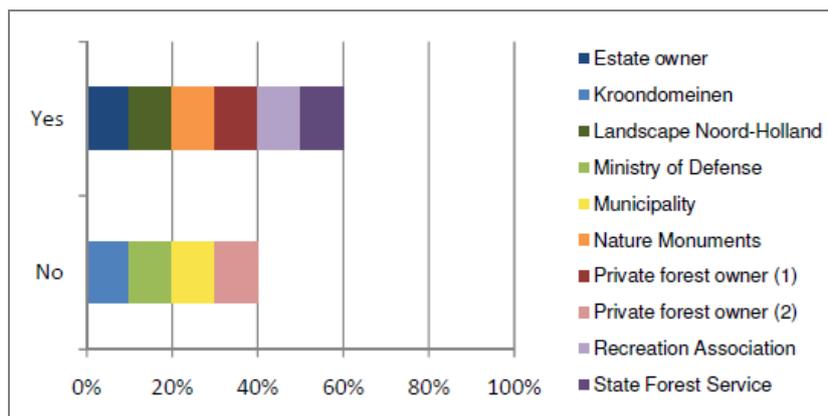


Figure 4.12 To remove unwanted vegetation

Remarkably, private forest owner (1) indicated that birch, *Betula*, is considered a weed and thus removed (see also table 4.13). Whether vegetation is unwanted is highly dependent of the vision an owner has for that area. Those respondents that indicated that vegetation is removed (see also figure 4.12), all did so in order to maintain pasture, grass land and reed. Common activities in that regard are mowing and removal, and to remove woody plants in order to maintain the habitat.

Table 4.13 Reasons to remove unwanted vegetation

To remove unwanted vegetation:	Reasons:	Provided by:
15a	YES, to maintain specific sites or habitats.	Estate owner Landscape Noord-Holland Nature Monuments Recreation Association State Forest Service
15b	YES, only <i>Betula</i> .	Private forest owner (1)
15c	NO, only <i>Prunus serotina</i> .	Kroondomeinen Ministry of Defence Municipality Private forest owner (2)

4.2.15 To till the soil

To till the soil, like fertilization, sowing or planting, can be considered an active measure. The measure is performed by most respondents (see also figure 4.13). According to the owners, to till the soil can be done to stimulate growth, natural regeneration, or to create a wanted starting point. If the choice is made to not use this method, the respondents indicated this is because growth and natural regeneration do not need stimulation or steering.

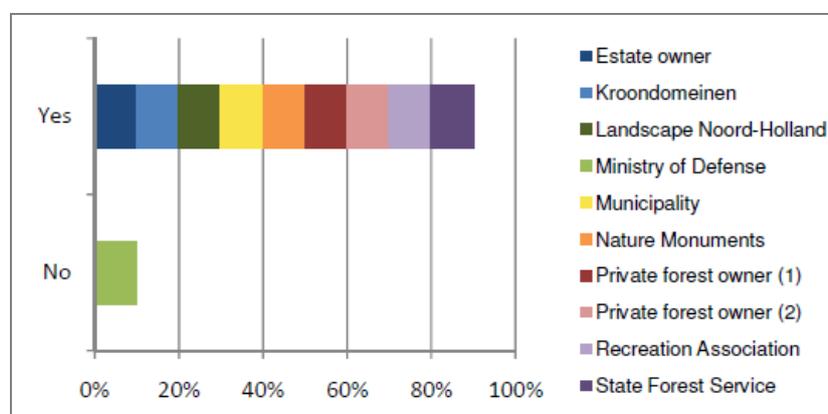


Figure 4.13 To till the soil

For the Recreation Association this measure is highly relevant. It is their task to manage a recreational area. The creation of the areas is mostly done by other parties, but sowing or planting does occur. The areas are often highly natural, like forest or natural grassland, but active steering and arrangements are in place to fulfil the recreational purposes. The other owners who do use this measure all indicate that it is used as little as possible; in most cases natural growth will be sufficient to reach their management goals.

Landscape Noord-Holland additionally indicated to fertilize pastures. The measure is also used to stimulate growth and to favour certain species (see also table 4.14). Certain owners are active in the acquisition of new natural areas; to them this measure then is highly relevant in order to create the starting point wanted.

Table 4.14 Extent of tilling the soil

To till the soil:	Extent:	Provided by:
16a	YES, moderately active to stimulate growth, attract species or to create the wanted starting point.	Estate owner Kroondomeinen Landscape Noord-Holland Municipality Nature Monuments Private forest owner (1) Private forest owner (2) State Forest Service
16b	YES, active to create and maintain specific areas for recreational purpose.	Recreation Association
16c	NO, not necessary.	Ministry of Defence

In that sense, this measure can be considered related to the measure of conversion management. This means, for example, the conversion of former farmland towards more natural grassland. The measure is also related to the measure of conversion management in a more forestry related way; if even aged trees are cut and more diverse forest is wanted to return, the activities like sowing or planting can be used to stimulate this process of a more natural or native forest system. This measure is therefore most relevant to owners who either acquire new areas or are harvesting timber (in larger open areas) and are following a conversion management regime.

Private forest owner (1), although presently not using this measure, is planning to use it in the near future, in order to stimulate natural regeneration. For the State Forest Service, this measure is often not explicitly done by themselves, but by the Government Service for Land and Water Management. Though, the order and the wish to till soil in certain areas are uttered by the State Forest Service. Both the State Forest Service and private forest owner (1) can therefore be considered to support and use this measure. The Ministry of Defence indicated that this measure was not used because they areas they own aren't harvested and they do not acquire new areas.

4.2.16 Conversion management

The expression conversion management is often used to describe a measure in which it is pursued to transform a forest stand with a production function towards a more natural system. But, this does not mean that no timber production is possible once the conversion is in place. To pursue this measure indicates a wish for more natural forests; because of the value for nature or biodiversity, but also to make a forest less vulnerable to illness or disasters. The respondents all indicated those reasons for using this measure, monocultures are considered the past. This measure must be seen in line with the history of Dutch forest and nature; forests are planted, often with the main function to produce wood and to secure soil from being blown away by the wind. Nowadays, these functions seem to have become less important. But, conversion management can also have a more general meaning; to converse something, from one thing into another.

When considering the concept in this way, it becomes relevant to Landscape Noord-Holland as well. The Landscape owns many areas; most of those areas aren't forest. But, conversion management is used in their case as well; former agricultural sites are converted into nature areas. The other respondents are all actively working on the conversion of production forest, former monocultures, towards more natural forest with a diversity of species and ages. Private forest owner (1) is just standing at the beginning of this process, while the Kroondomeinen no longer uses conversion

management as this measure is used in the past and nowadays all forest is converted. Thus, although the Kroondomeinen currently isn't actively converting, the measure is highly relevant to them, and they used the same considerations for doing so as the other owners.

4.2.17 To construct waterways or drainage

Adapting or creating waterways or drainage, changing the water balance, can be considered a quite intensive activity. Though, if an owner chooses this measure (see figure 4.14), it is expected to be done in order to reach specific goals.

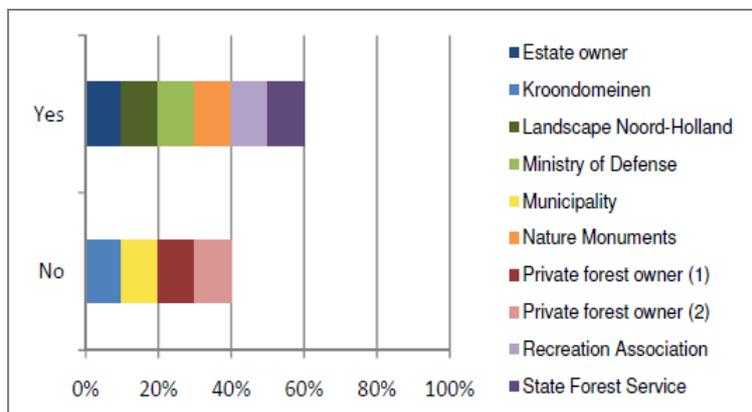


Figure 4.14 To construct waterways or drainage

The Ministry of Defence uses this measure to make areas suitable for passage by military vehicles. They indicated that these measures were done in the friendliest way with regard to the natural environment. To Nature Monuments this measure is a means to drain rainwater in place where seepage is present. The waterways are meant to drain the rainwater in order to keep and stimulate the vegetation dependent of seepage. Nature Monuments also uses newly created waterways to ease the management; of pastures, for example, where the water level is lowered in order to make the mowing with machines more easily and to prevent damaging the soil.

State Forest Service also uses this measure for shallow drainage of areas. Landscape Noord-Holland feels the need to use the measure in order to create and maintain nature areas with their own water balance. They argue that the areas, which are often surrounded by farmers, need their own water balance in order to reach a certain level of nature. The water originating from the farmers is considered to be of too poor quality. The estate owner will use this measure to restore an area back to its original water balance, hoping the associated vegetation will appear. The reasons for using this measure are thus specific, and different among the owners. But, except for the Ministry of Defence, the general idea behind using this measure is to maintain or create a habitat or site with specific characteristics and needs. The owners, who do not use this measure, do not because such sites are not present in their areas.

4.3 The similarities and differences among the owners

The previous paragraph outlined the measures and described the reasons for or extent of those measures. That information is further analysed in order to identify the level of similarity among the owners. Within each theme, groups are assigned, and the extent to which an owner shares a group with the other owners is determined. Within the themes, the owners are thus grouped. Respondents sharing the same group indicate that they are highly similar with regard to the use and the considerations of the measures within that theme. Together with the analysis of the answers given by the respondents this provides specific results.

Important to notice here is that the actions, the measures, are shaped in a process in which identity is, an important, but just one factor. But, the reasons for and the extent in which a certain action is performed does provide insight in the identity. Not all actions, and not all considerations related to that action, are shaped evenly by identity. Sometimes another element is more restrictive, like a lack of means. During the analysis of the measures and the themes the aim lies therefore in the identification

of the most important elements in which that action is shaped, whether it are practical restrictions or based on more intrinsic considerations related to the concepts of image or identity.

4.3.1 Recreation

The division of groups among the respondents is visualized in appendix II, as is the level of shared measures and considerations among the groups. The result of this analysis is visualized in figure 4.15. The theme recreation refers to extent to which the respondents feel the need and the obligation to provide for their visitors. To an owner, to host visitors requires time and money. The considerations to put a lot effort in those visitors, or not, might therefore provide insight in the owners' core characteristics.

The four groups differ in their affiliation with recreation. The differences between the groups are primarily based on the differences in the practical amount and the quality the visitors are provided for. When including the considerations on which these differences are based, it appears that the Recreation Association values recreation highest and is therefore most willing to put effort in these kinds of activities. The Recreation Association is most characterized by the focus on visitors, rather than nature or timber production for example.

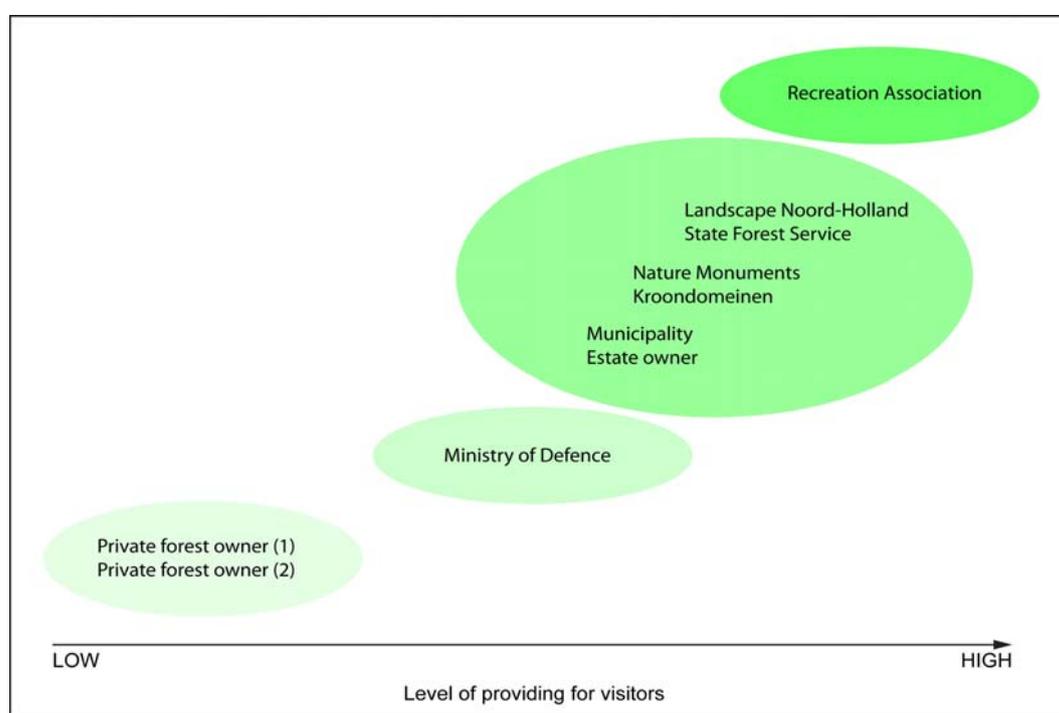


Figure 4.15 Recreation: extent of similarities and differences among the owners

On the other end of the spectrum the private forest owners are found, who are less willing to facilitate their visitors. Their resistance is traced back to the burden the visitors place on the area, both physical and financial. The private forest owners' focus on recreation is limited by the need to dedicate the whole forest area to the production of timber and the costs involved in providing for visitors. The other respondents feel this burden as well, but likely to a lesser degree, because they own larger areas, and are considered to be better equipped in terms of finances and organisational capacities.

The Ministry of Defence forms a special group, because of its constant struggle between managing forest and nature for society and being the main military administration. Recreational joint use is allowed by the Ministry, and it has even indicated a change towards a more visitor oriented approach. The largest group consists of the respondents who share a similar level of willingness to facilitate for their visitors. The differences among them are based on practical considerations like the amount of visitors in the areas, size of the areas and financial and organisational abilities. Because their areas are larger, these owners feel better equipped to facilitate visitors while still being able to preserve quality of forest and nature. They share their willingness to host within their areas, but differentiate themselves from the Recreation Association by not putting recreation explicitly on the first place.

The respondents differ on four levels in the extent of providing for visitors, visualized by means of the four groups. But, the extent of this difference is considered small because all respondents do provide essentially. Also, many of the differences are traced back to practical considerations rather than intrinsic motivations.

4.3.2 Cultural heritage

The second theme, namely 'cultural heritage', indicates that the respondents can be divided into two groups, although the groups are overlapping. See appendix III for the level of shared measures and considerations among the groups. As mentioned before, the practical considerations like the amount of cultural elements present and the means to manage it provide nuances within the group. But, in overall, the characteristics of the group are the same; each respondent values cultural heritage highly and therefore explicitly dedicates time and effort to it. The extent of similarities and difference among the owners with regard to cultural heritage is visualized in figure 4.16.

The felt need to maintain and preserve cultural heritage is considered to be related to a felt responsibility towards society, or history in general, to maintain these elements. The owners have some level of authority over these elements, as these lay within their areas. And it is often up to their choice whether they want to pay attention to the cultural heritage. But, these elements are not just relevant to the owners themselves. The cultural heritage is often part of the history of not only the natural area, but even of regions or the overall country. The willingness to manage the elements of culture heritage is thus considered to represent an identity characteristic of felt importance and responsibility to maintain and preserve towards a greater public than just the owner self.

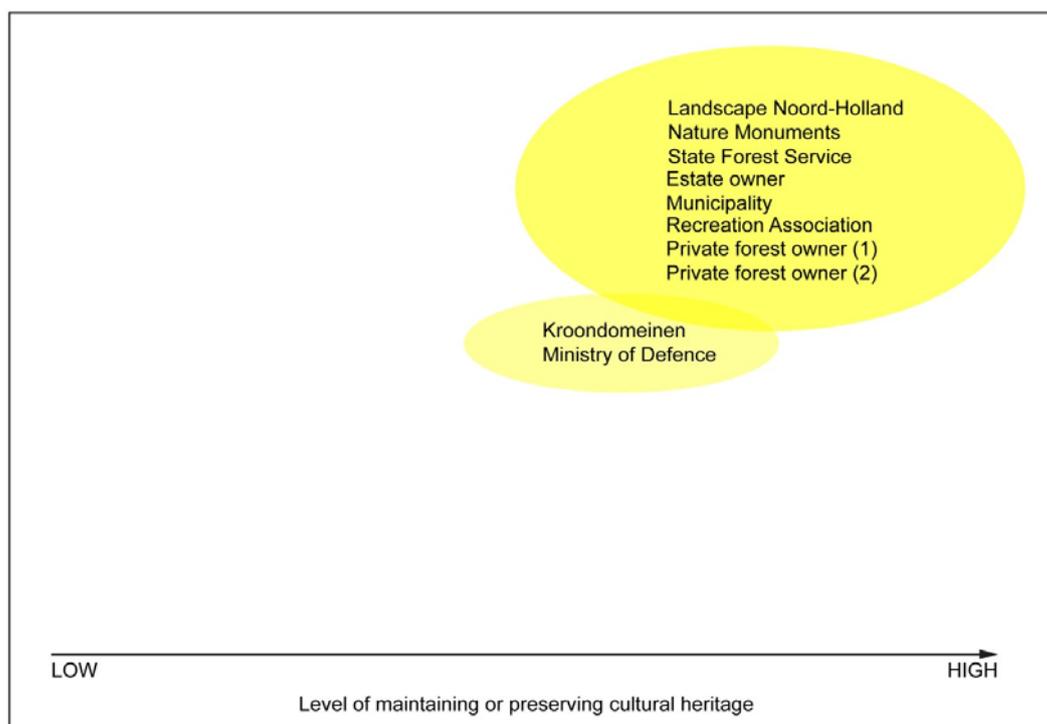


Figure 4.16 Cultural heritage: extent of similarities and differences among the owners

The Kroondomeinen and the Ministry of Defence form a small diverging group; the presence of coppice wood, neither for reasons of cultural heritage nor natural value, is not considered important enough to be willing to maintain it. Thus, although other elements of cultural heritage are valued by them, and preserved, the management of coppice wood makes that they are forming a group together.

4.3.3 Nature orientation

The third theme, nature orientation, provides a more distinct insight into the differences among the owners. In appendix IV the analysis of the theme is showed, indicating the amount of shared groups,

and the level of shared measures and considerations. This theme reflects the respondents' strive for creation, stimulation or conservation of the natural state of the area, with allowing natural processes to occur. The extent of similarities and difference among the owners with regard to nature orientation is visualized in figure 4.17.

Landscape Noord-Holland and Nature Monuments appear to be most nature oriented, as they explicitly choose the most hands-off approach of all respondents, which is reflected in their unwillingness to not thin if possible and by not actively increasing the amount of dead wood. Although the active stimulation of the presence of dead wood would probably lead to more natural characteristics within the areas, they choose to leave it up to the natural processes to come to such a state.

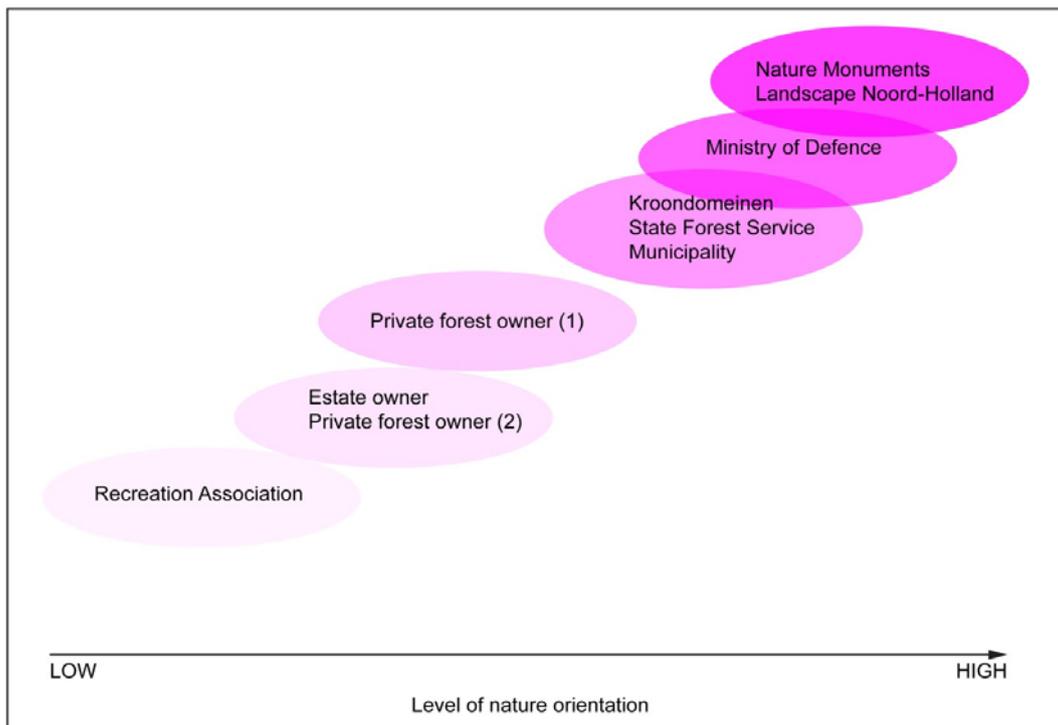


Figure 4.17 Nature orientation: extent of similarities and differences among the owners

The overlapping groups of Kroondomeinen, the municipality, the State Forest Service and the Ministry of Defence are also characterized by a large orientation towards nature, and thus do not differ as much in that respect. The differences between these owners and the first group of Nature Monuments and Landscape Noord-Holland are related to practical considerations.

The Ministry of Defence is limited in their ambitions because of the military function the areas hold, this has proven incompatible at some points and places in the past. The Kroondomeinen, the municipality and the State Forest Service are forced to dedicate parts of their areas to timber production, and can not afford to thin without cashing possible returns. They need to use some of their areas to earn income, and are thereby limited in the level of naturalness that can be achieved. These differences are thus of practical nature, but, Nature Monuments, Landscape Noord-Holland, Ministry of Defence, Kroondomeinen, the municipality and the State Forest Service seem to share their level of intrinsic nature orientation.

The estate owner, private forest owner (1) and private forest owner (2) are also limited in the abilities to strive for the most natural system because of their need to generate income. They need to dedicate large parts of their area to this need. Striking from the interviews was that the owners do not consider their areas to be less natural than the areas of owners who do not need to generate income to the same extent from timber harvest. They do not consider the presence of exotic or introduced species to diminish the naturalness of their sites. But, private forest owner (1) did indicate to have just started to actively pursue a more natural, and above all, a more native state of the area, and is therefore placed between the groups.

The Recreation Association is considered to be the least nature oriented of the respondents because the measures leading to a more natural state of the site are not taken by the Recreation Association because of their goal or objective to achieve such a natural state, but because they consider it more attractive from the visitor's perspective.

4.3.4 Timber production

The fourth theme relates to the production of timber. If the measures relevant to this theme, the participation by the owners, and the considerations are analysed, some groups are distinguished. In appendix V the groups of owners with the same use and the considerations are displayed. This theme relates to the owners' willingness to view the forest as a means of income. The extent of similarities and difference among the owners with regard to timber production is visualized in figure 4.18:

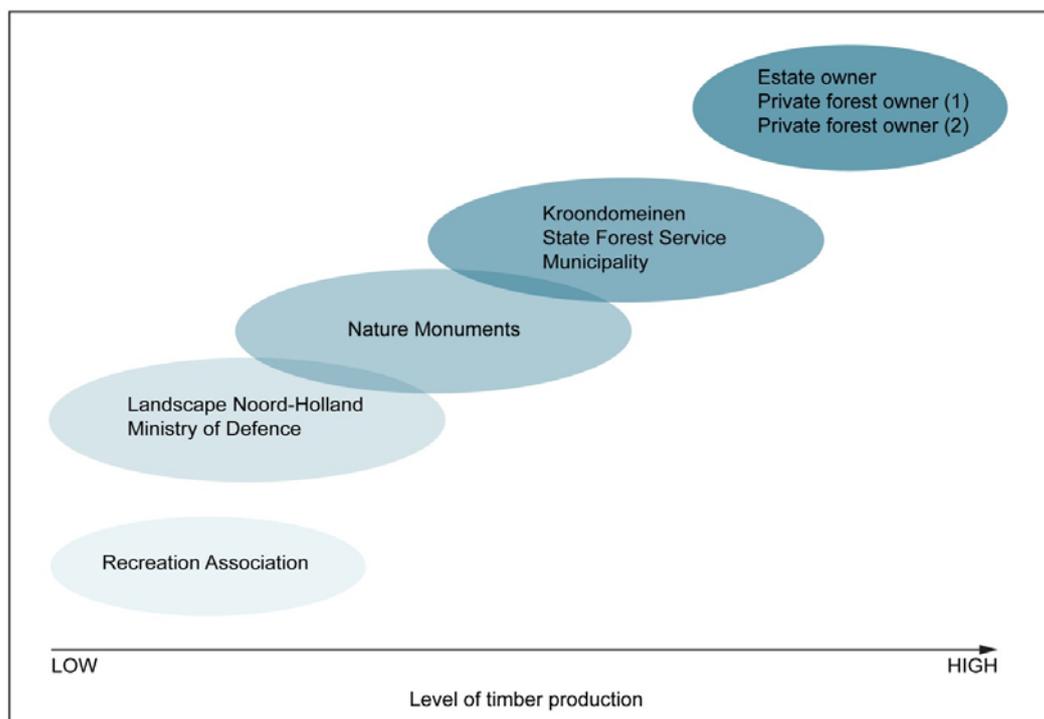


Figure 4.18 Timber production: extent of similarities and differences among the owners

The analysis revealed that the differences between the respondents are not part of a different core belief whether forest and nature can provide income. The owners harvesting timber do so because they do not see any other choice then to use the income provided by the area to finance management and to be able to reach additional goals. Timber harvest is also practiced to maintain cultural sites or to secure that people can safely visited the area.

When timber is not harvested, in the case of Landscape Noord-Holland, the Ministry of Defence and the Recreation Association, this is because of practical considerations. In the case of Landscape Noord-Holland the forest areas are relatively small or dedicated as reserve, so the timber harvest can not play a significant role as a means to generate income. The Ministry of Defence and the Recreation Association are in this sense a different owner; because of their organisational structure they do not need to use or are familiar with the opportunities the area and timber production provides for generating income from it.

Timber production appears to be determined by practical considerations rather than by being a part of a core belief. Considerations which would reflect such a core belief would be expected to be more in line of: "I believe that the forest's sole purpose is to provide timber." The owners also do not design their forest stands in a way most profitable for timber harvest; variation and diversity are valued highly and are considered more important than more monotone stands. Also, it appears that the amount of timber harvest is based on the amount on income needed; if not necessary, not all of the area is dedicated to timber production.

4.3.5 Intensely managed habitats

The fifth theme consists of the measures relevant to the creation and maintenance of habitats which demand active management in order to be maintained. See appendix VI for the level of shared measures and considerations among the groups. To feel the intrinsic obligation to maintain specific habitats, even if this would demand intense management indicates something about the extent to which owners are prepared to influence and manage areas. To all owners, these kinds of measure are not 'not done' to them. The extent of the similarities and differences among the respondents is reflected in figure 4.19. The figure indicates that there are different groups, and thus, differences do exist. The analysis of the use of the measures within this theme and the considerations attached to that show that these differences are primarily based on practical considerations.

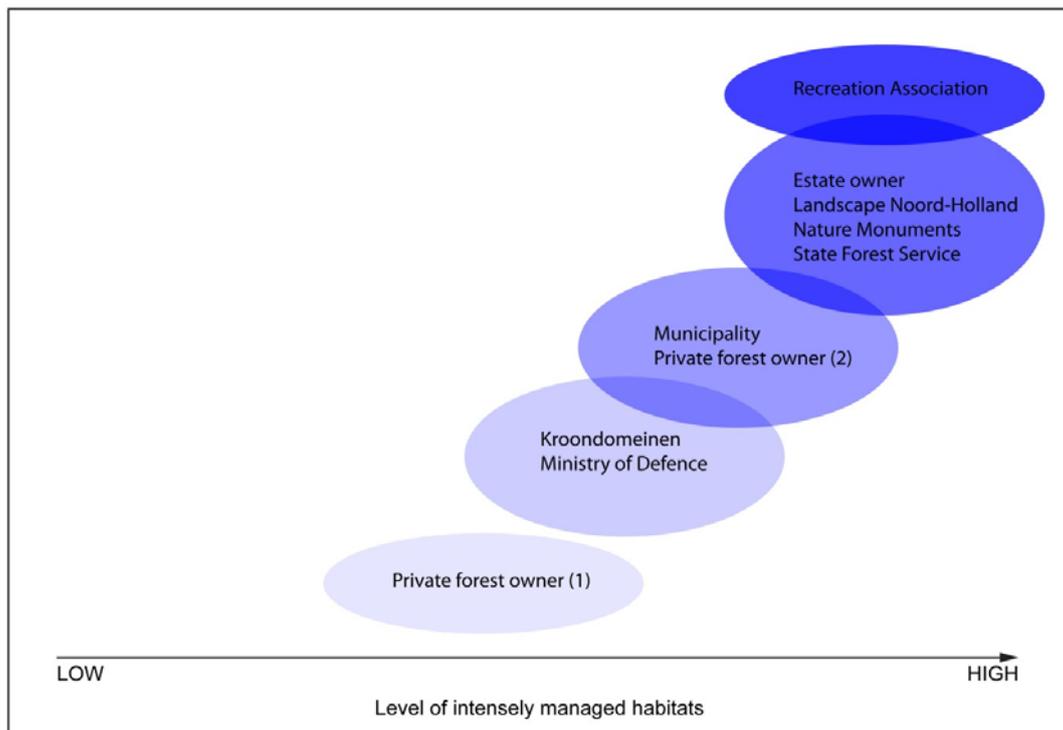


Figure 4.19 Intensely managed habitats: extent of similarities and differences among the owners

The Recreation Association differentiates itself somewhat more relative to the others, because they choose to intensely manage areas in order to provide the visitors with a unique site. Their considerations are not based on creating unique sites because of the natural value, or to create or maintain a habitat for a specific species. Also private forest owner (1) stands somewhat out, but for a quite different reason. Private forest owner (1) has actively been removing *Betula* from the forest because it was considered a weed, while this species is native and commonly present within the area.

The Kroondomeinen and the Ministry of Defence feel somewhat less inclined to actively influence and manage areas, although it does occur. For example, coppice wood is not maintained, but forest edges are. They also share the idea that the only real unwanted vegetation is *Prunus serotina*. To the Ministry of Defence it is unnecessary to till the soil within the area. But, the reasons for not doing this are considered to be more practical; as opposed to Kroondomeinen, the Ministry does not harvest any timber, so places where planting or sowing are less likely to be present.

The municipality is placed between the groups, as it shares characteristics with both. Although the municipality does not own any coppice wood themselves, it is considered of high value that the Marke does. Also, the municipality does manage forest edges by means of creating and maintaining coppice wood there. In that respect, the municipality is related to the group of the estate owner, Landscape Noord-Holland, Nature Monuments and the State Forest Service. But, the municipality does not know any unwanted vegetation other than *Prunus serotina*, and is therefore considered to link the second group and the third group. Like the municipality, no coppice wood is present within the areas of the two private forest owners. Private forest owner (2) shares characteristics with the municipality, as they

both moderately active till the soil and consider only *Prunus serotina* to be unwanted vegetation. The management of forest edges is irrelevant to this owner. Although this owner thus also shares characteristics with the Kroondomeinen and the Ministry of Defence, the private forest owner (2) is placed within the group of the municipality as the explicit choice not to manage coppice wood by the Kroondomeinen and the Ministry of Defence is considered to be a very differentiating element. Because this is irrelevant to this private forest owner, it is considered to be most alike, in this respect, with the municipality.

4.3.6 Conversion management

The last theme, called 'conversion', relates to the willingness of the owners to practice measures related to the conversion of areas from one type or function to another. Each of the owners is, or has been active in the measure conversion management (see also appendix VII). No distinctions can be found in this respect.

But, the analysis does reveal some differences, as four different groups emerge. The different groups are primarily the result of practical restrictions; none of the owners indicate that they think in line of "conversion is essentially wrong, nature must take it's own course." All respondents indicated that nothing is wrong with sometimes creating a head start in the development of an area. The extent of the similarities and difference among the owners with regard to conversion is visualized in figure 4.20:

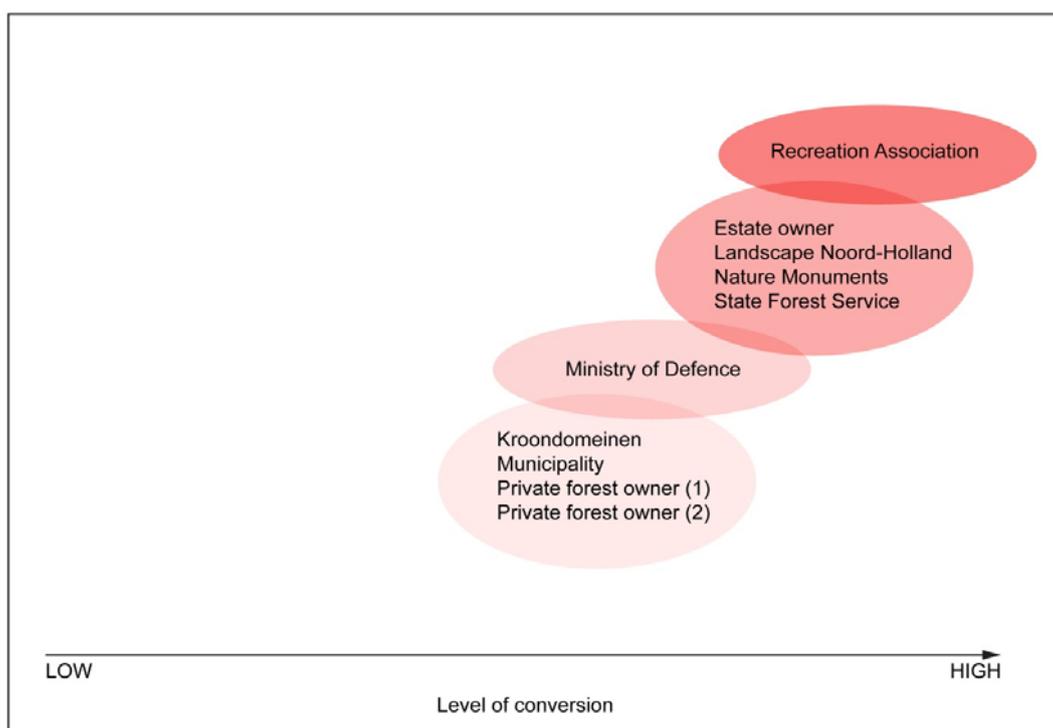


Figure 4.20 Conversion: extent of similarities and differences among the owners

The measure of tilling the soil is most actively done by the Recreation Association and least actively by the Ministry of Defence. The main distinction is made by considering the measure of constructing waterways or drainage. This measure is considered to be more invasive within an area than to till the soil. Therefore the owners who do use the measure of constructing waterways or drainage are assigned a higher level of conversion.

The last group consists of those owners who do not construct waterways or drainage. This distinction is quite explicit, but the groups differentiated in this theme are primarily based on practical considerations; to not till the soil or to not construct waterways or drainage is highly related to the presence of sites requiring such measures. Most important to this theme is the willingness of all owners to converse their areas towards a more natural composition, with more natural characteristics and natural processes involved.

The theme 'conversion', seems to be highly valued by all respondents, because conversion management is, now or in the recent past, practiced by all respondents. All of the respondents find it important to make areas more natural and remove human design, like square forest stands or former rural measures. The Recreation Associations however primarily strives towards satisfaction of the needs of the visitors, while the other respondents also acknowledge the value of a more natural composition and structure without its meaning for recreation.

4.4 Image

4.4.1 *Image; the identity as perceived by others*

The third and fourth research question relate to the concept of image. Image can be understood as the idea another one holds about someone's identity. To answer these research questions, the respondents were asked about their opinion about others, and, they were asked about how they thought others would think of them. Unfortunately, the respondents appeared often reluctant to stress these opinions, or indicated to know little about the management of the other forest and nature owners. The results provided on these research questions are therefore limited.

4.4.2 *The Kroondomeinen*

The Kroondomeinen indicates that the estate they own contains certain values, both related to landscape as well as to cultural heritage, biodiversity and production capacity. The Kroondomeinen strives to do justice to all these values. They are aiming to develop the entire forest area into a complete ecosystem, a forest ecosystem, in which the biodiversity is given room to develop but in which timber can be harvested as well. Their forest area is, for the most part, converted from a production oriented function towards a multifunctional forest. Within this multifunctional forest, production function and nature function are combined. The combination of explicitly these two functions is most important to the Kroondomeinen, because they consider recreation to be a function which can be practiced everywhere, and so, no specific conversion is needed with regard to recreation. A large part of this multifunctional forest needs to be completely native; otherwise the Kroondomeinen considers the forest not to be truly multifunctional. The Kroondomeinen thinks they are stricter in this definition and implementation of multifunctional forest management than other forest owners. The Kroondomeinen aims for the future thus to further strengthen their forest area into this one continuous forest ecosystem. The main differences among the forest and nature owners lies, according to the Kroondomeinen, within the level to which exotic, non-native species are fought by owners, and the level in which timber is harvested.

The heath lands are preserved because they are considered to be a cultural historical landscape, with thus valuable accompanying biodiversity. The agricultural areas within the Kroondomeinen are considered to be valuable because of their historical roots as well; especially the landscape image is therefore also in need to be preserved.

Many of the respondents indicate to have little knowledge about the way the Kroondomeinen is being managed. Those owners who did know anything about the Kroondomeinen indicated that indeed the Kroondomeinen differentiates themselves because of the Kroondomeinen's need to generate income from timber harvest. The respondents also indicated that the balance the Kroondomeinen searches between nature function and production function is very interesting to them to monitor.

4.4.3 *The Landscapes*

In the Netherlands, twelve Landscapes are present. It is likely that the location a forest and nature owner lives or works, determines about which of the Landscapes the owner knows most about. The Landscapes represent each of the twelve provinces, and in some of these provinces primarily forest areas are present, while in other provinces other nature areas are most occurring. This diversity in landscapes, also reflects a diversity in Landscapes. The respondents are therefore likely to all have very different images about the organizations, depending on which Landscape they know most about. The cooperation between the Landscapes and the other forest and nature owners differs a lot as well; some cooperate well and satisfactory, while others have no contact at all with the Landscape nearest to them. To indicate the image of the Landscapes, as well as the way the Landscapes are perceived by others is therefore not considered possible within this research.

4.4.4 *Ministry of Defence*

The Ministry of Defence indicates that their main function is the military function. This function is most important and is always given priority over any other function or use within the areas. The second most important cornerstone on which the management is based, is nature conservation. Cultural heritage and archaeology are also considered valuable, and are given much attention. To the Ministry, recreation comes last in line. They do allow recreational joint use of the areas, but have not actively been providing recreational facilities themselves.

The Ministry thinks that the other forest and nature owners are quite divided in their opinion about the Ministry of Defence as a forest and nature conservationist. The Ministry suspects that specifically private forest owners will not think highly of them. But, they also think that the larger forest and nature conservation organizations consider them a full and respected member within the field. The Ministry of Defence thinks that the other owners consider them to be a true conservationist with an eye for nature. The Ministry indicates that this image is something they worked on specifically over the last decade. The need to improve the image was felt because there was made a call by the public to decrease the areas owned by the Ministry in the '80's. Because of that, the Ministry of Defence realized they had to be recognized as the good forest and nature owner they were striving to be. Therefore it was set in policy plans that the Ministry was also, next to their military function, a manager of nature. The Ministry indicates that they feel a huge responsibility to do so well, and that they have a obligation towards society to perform their task as good as they possibly can.

For the future, the Ministry of Defence is aiming to increasingly become better in reaching the general public. Their aim is to improve the communication with the public at large. This need is felt because the Ministry of Defence wants the public to know about the areas they manage, and about the natural values to be found and experienced there. Another important spearhead of the Ministry for the years to come is the improvement of the cooperation with other forest and nature owners. They explicitly are increasingly aiming to cooperate within the field in order to streamline management plans of areas, to cooperate at performing certain management activities or to fine-tune management in general. The Ministry of Defence is actively searching this cooperation in order to be able to manage their areas, and the landscape in general, better, but also to use the opportunity to learn from their colleagues in the field about, for instance, reaching the public.

Many of the respondents know little about the management of the Ministry of Defence with regard to the forest and nature areas, and can therefore not stipulate their opinion well. This also goes for the private forest owners. To the larger forest and nature conservation organizations, the Ministry is known. These forest and nature owners indicate that they think the Ministry to be very involved in the management, and that they are really trying to achieve the best possible. The Ministry is especially valued by the larger organizations because they are in technical and historical perspective not really considered to be forest and nature conservationist. The activities and achievements of the Ministry within the field over the years are therefore valued greatly.

4.4.5 *Municipalities*

The image of a municipality is difficult to determine, as the various respondents all have to do with different municipalities. Also, the various owners have to do with more than one municipality as well, especially with regard to aspects like communication and cooperation. The image of a municipality and the images the municipality holds varies therefore greatly among the municipalities: some do not have any contact with the forest and nature owners near, the respondents then indicate to know nothing about the municipality. Other respondents are positive about some municipalities, while less positive about others. The municipalities themselves also differ greatly of course, some own forest or nature areas themselves, while others do not, or, some municipalities are larger, have more financial and human resources etc. To indicate an image of the municipality and the perceived image of the forest and nature owners about the municipalities is therefore considered to be meaningless within this research.

4.4.6 *Nature Monuments*

Nature Monuments states that the public at large is guiding their management. Because the public has expectations of Nature Monuments, certain goals are strived for or activities are done, but also not

done because of the public. The general public is considered very important to them. To deal with the restrictions the public might impose on the management of Nature Monuments, is seen as a task ahead by Nature Monuments.

Nature Monuments indicates that they think it is important to decide on certain issues. Choices must be made; for example, to do completely nothing in specific areas, or to leave dead animal bodies in sight. It is indicated that it is important to find the courage to make such choices, in order to be able to learn and advance. Also within the organisation of Nature Monuments, to do nothing within an area has proved to be very difficult to implement in the past. Therefore this explicit choice is considered needed.

Nature Monuments thinks that other owners of forest and nature see them as slightly arrogant, but also as progressive. Because they try things others won't. Nature Monuments also considers itself to be successful in the way they bring the organization to the attention of others and how they are able to characterize themselves to the public. Nature Monuments also expects that they are valued by other parties for their practical knowledge and experience. The cooperation within the field, concerning the day-to-day work with other organizations is considered to go well. Nature Monuments experiences this cooperation to be pleasant, although at higher administrative levels the cooperation with other organizations often seems to be more laborious at occasions.

The other respondents all consider Nature Monuments to aim more for natural characteristics than they do themselves. But this distinction is not found to be very large. The differences are found in the level in which for example, timber is harvested or restrictions are imposed on the public. But these differences are small, and some of the respondents indicate that Nature Monuments has become more and more similar to the other owners as doing completely nothing within the areas seems no longer viable to them. The respondents see Nature Monuments as progressive indeed. But, at the same time, some respondents do consider the organization to be arrogant as well. To some, Nature Monuments shows little affection with their surroundings, implicating as if Nature Monuments were the only conservationist capable of doing the job right. The communication between Nature Monuments and the respondents also differs. Those respondents with close contact speak more highly of Nature Monuments and its management.

4.4.7 *The private forest owners*

The estate owner and the private forest owners questioned within this research are not known to all of the other respondents. The other respondents are therefore questioned about the private forest owners (and thus also the estate owners) within their own surrounding. The various respondents all made similar remarks about this group of forest and nature owners, and these remarks are presented together with the remarks the questioned private forest owners and the estate owner of this research gave about the things they value and the elements which guide them in their management.

The estate owner and the private forest owners all indicate that the lasting and sustainable preservation of their possession is of highest importance to them. This importance and value is attached to the historical roots they have with their areas. The attachment to the area's is high and their management is therefore in all three cases steered by the wish to maintain their property. These owners also value the diversity of and within their areas highly which has often emerged from the many years of human use of the areas. Maintaining this diversity within and among the areas is influential within the management to them as well. An important characteristic of these owners is their need to generate income by means of timber harvest in order to be able to pay for the management.

To the other respondents, private owners are considered to add valuable diversity to the field of forest and nature conservation. The presence of estates and smaller private forest property bears to them an important part of the cultural heritage and landscape value. The respondents all see the private owners' need to generate income from timber harvest, and therefore consider it logic that these private owners base their management decisions on (partly) financial considerations, rather than explicitly choosing a, for example, completely nature oriented management approach.

The level of cooperation between private forest owners and non-private forest owners differs greatly. Some of the respondents have no contact with their next-door neighbours of private forest owners, while others have contact and cooperate, to a limited extent however. The estate owner and the

private forest owners in this research also indicated that contact with co-owners primarily consists of contact with co-private forest owners, rather than with larger organizational forest and nature conservationists. These contacts range from, for example, visiting each other's areas, to working groups, and explicitly coinciding harvesting dates. The other respondents indicated that often cooperation or communication is not sought because there's considered no need to. Only when initiatives like the creation of an ecological zone occurs, cooperation and intensive communication may become present. The other respondents also do not really feel as if the private forest owners are searching for more communication or cooperation from their side as well.

4.4.8 *Recreation Association*

The Recreation Association does not consider itself to be a forest and nature conservationist above all. Their primary interest lies with open air recreation. To them, this recreation can be facilitated by providing stimulating or attractive surroundings, like natural areas. In that respect these areas are more a means to reach an end. The Recreation Association does indicate that communication and cooperation between them and other forest and nature owners is considered common practice. The communication consists of knowledge exchange, while the cooperation focuses on the management of areas. Often the most natural areas of the Recreation Association are then managed by other forest and nature owners, while the Recreation Association provides and manages within the less natural areas. The visions of the clients of the Recreation Association may of course also vary. Therefore, a specific characterization of the organization is considered difficult to make. The other respondents within this research also have difficulty characterizing their local Recreation Association, if even present. To them, this owner not really represents their image of a forest and nature conservationist and they primarily pin the organization down on their recreational aims.

4.4.9 *State Forest Service*

The State Forest Service explicitly utters the wish to be the forest and nature conservationist of the public at large. They want to provide this public with nature experiences, so it will gain attachment to nature and the natural sites of the Netherlands. This wish is considered to be a complete mental transformation in comparison with twenty years ago. At that time, the State Forest Service had an attitude in which they were not always willing to allow the public in their areas. The transformation is, according to the State Forest Service, the result of their privatization. After they gained their independence, they were forced to justify their vision and actions. The State Forest Service needed to justify them being the conservationist of the Dutch forest and nature areas.

Nowadays, recreation is considered highly important, and they are searching for new ways of hosting the public and providing them with the experiences in nature. Therefore, the people within the organization are highly motivated to stimulate high quality nature. Concepts like cultural heritage and landscape experience have also grown importance over the years. The State Forest Service indicates to realize now that their areas hold valuable elements of cultural heritage and that they own areas which are part of valuable landscapes. Increasingly attention is therefore paid to these valuable elements in order to prevent it from being lost.

But, the State Forest Service lacks the means to reach all of their goals. According to them, this is the consequence of their special position. The State Forest Service is not able to gain income from membership fees, donations or private funds. The means to perform certain activities are only originating from specific subsidies. In practice this means that the State Forest Service is not able to perform any activity they wish. Because they are dependent on the subsidies available and need to comply with the rules and obligations that come with that subsidy. To reach their goals the State Forest Service therefore searches cooperation with other parties, like provinces. But, they also indicate that they need to make choices in how much they can do, and this choices must be made, made more explicit, and must be communicated clearly to the outside world. Because the State Forest Service can't do as much as it would like, the choices made need to be justified to the public and therefore clear communication is considered crucial.

Their wish for the future is to become more interactive with their surroundings. The State Forest Service wants to involve the public more, allowing them to express their ideas, wishes and images, in order to increase attachment and public support.

The other respondents see the wish of the State Forest Service to be public oriented reflected in the management. According to most respondents, the management of the State Forest Service is not very different of their own. Many similarities are considered present. But, the other respondents also indicate that they find the State Forest Service to suffer from bureaucratic processes. Because the State Forest Service is too bureaucratic it is at risk of losing the connection with the forest and nature areas. It is also indicated that in the past, the State Forest Service was more connected to the practical field, while nowadays this connection becomes more and more lost as well. The management system the State Forest Service uses is considered to be somewhat complicated and does not reflect the wish to be public oriented sufficiently. In general, the cooperation with the State Forest Service is considered to be pleasant and successful, also because the differences in actual management activities and aims within the field differ only slightly.

5 Discussion

5.1 Introduction

Before drawing conclusions about the results, presented in the previous chapter, the research will be reflected upon. Therefore, this chapter provides a reflection on the research objective and the theoretical framework (§ 5.2). This part of the chapter will discuss whether the objective, the research questions evolving from it, and the theoretical framework are sufficiently able to substantiate the research findings. The third paragraph (§ 5.3) discusses whether the methodology used was suitable and able to provide the information wanted.

5.2 Reflection on the research objective and the theoretical framework

This research started with the objective to gain insight into the diversity and the characteristics of that diversity among Dutch forest and nature owners. This research was considered needed because it seemed like the activities within the field were becoming more and more alike, especially after the new concepts like close-to-nature management and multifunctional forest management emerged. But, did this also mean that the owners were becoming more and more similar? Different actions may indicate difference among the owners, but the interest of this research lay at a different level; what are the differences at the core? Was the trend towards more similarity at management level an indication for more intrinsic similarity, or can you seem similar, but still differ truly insight?

The theoretical framework was able to link these different levels of 'different', and was able to outline how action is made into being. The theoretical framework also provided the link between the actions within the outer world and the feelings and considerations within the inner of a person. It showed that action is shaped in a sensemaking process in which identity and image are important factors. But, identity and image are still only partially responsible for the actions undertaken. The theoretical framework also identified other influential structures, for example, simple practical considerations like the obligation to comply with rules and regulations, or the need to generate income. The theoretical framework was designed in a way which suggested that if any action would be peeled, the core elements would automatically emerge. It was considered that, boldly stated, every action was determined by a basic mixture of some core considerations and convictions, supplemented with past experiences and education, some social pressure and steering, and restricted by a lack of various elements like time, money, juridical perspectives etc.

The research questions were aimed at peeling these layers off until the core was reached. The research objective however, was formulated more general, and the theoretical framework was indeed very useful and suitable to reach this objective. Because, as the results showed, many information about the management activities and the forest and nature owners has become available. This has indeed shown how the respondents differ in the management activities they undertake and the extent of those differences. However, the aim was to view the objective from the standpoint of identity because this was expected to provide the most elementary, the most valuable and the most complete insight.

The results indicated that most actions are undertaken, or not undertaken because of very specific and practical reasons. The theoretical framework however suggested that the identity could be detected in a relatively simple manner, because the identity and the practical restrictions are both a part of the same clear transparent process. However, the results indicated that the structures which contain the practical considerations and obligations are of such an importance, that it consequently blurred the sight on other important concepts. Therefore it seemed like the research questions related to identity (especially the first and the second research questions) could not be sufficiently answered. It appeared that practical considerations and restrictions are so highly influential or restrictive on the possibilities of a forest and nature owner that other elements, within the sensemaking process in which action is shaped, are overshadowing and overwhelming the choices an owner makes on basis of core convictions about 'what the owner must do' or 'what a good owner must be like.' It definitely feels as a pity that the forest and nature owner apparently can put only so little of himself in the management, and that the work primarily consists of juggling between obligations and restrictions. Other researches, like within the work of Bohlin and Roos (2002), Boon et al. (2004) and Ingemarson et al. (2006), for example, also indicate that practical considerations are very important within the work of forest and

nature, as their typologies are primarily based on practical considerations. This acknowledgement is also found within the work of Karpinnen (1998) and Kvarda (2004) because they study forest owners of very specific sub-groups, like small-scale forest owners, thereby acknowledging the specific circumstances in which the owners operate.

The theoretical framework, and the method of tracing the actions back to its core has thus proven to be somewhat unsuccessful. The representation of the structures within the theoretical framework are maybe in need to be adjusted towards a hazy black box like shape, which blocks our sight. Although the results have led to great insight about the Dutch situation of forest and nature owners, the research questions can not be answered satisfactory. It must be discussed whether this is due to the inadequate theoretical framework and methodology or whether the rules and obligations must be blamed, maybe even depriving the forest and nature owners of the possibility to reflect their sense of self within their management. But, the status quo forms the basis for further research, and in this respect the question whether to pity the forest and nature owners becomes irrelevant. It is therefore strongly suggested to view upon the methodology in order to be able to transform the hazy black box to a transparent frame, in order to be better able to place the role of identity and of rules and obligations in the right context within the process. Further research is thus strongly required in order to substantiate the findings of this research, or to gain better insight in the situation.

Because the identity of the owners was difficult to detect, it also made it more difficult to answer the other research questions, with the focus on image. But, the results about this part of the research were also restricted by another important occurrence; namely the respondents' unwillingness to discuss the management of their co-forest and nature owners. The theoretical framework however was very suitable to place the concept of image in relation to the sensemaking process and to relate that in turn to identity; as identity and image are strongly connected, and identity forms a core part of sensemaking, the combination is very strong. Unfortunately this could not be really put up to the test, due to the little information the respondents were willing to provide on this manner. Other research on forest and nature owners do also provide little to no help about this subject; there is hardly no information to be found on the image forest owners hold on their colleagues, and how this image is influencing their actions or shaping their view on their work. This immediately indicates that research on this topic must be encouraged, because every unknown phenomena or force influencing the forest and nature owners must be placed in context, to improve our practice and line of work.

5.3 Reflection on the methodology

When reflecting upon the methodology of this research, the choices made become important. The first and most crucial choice has been the choice to use face-to-face interviews. This choice has been based on the idea that identity is so much 'inside', that a questionnaire would not provide sufficient insight. Identity is also considered to be reflected in the little details of conversation, and to not have any idea about, for example, the hesitations, expressions of enthusiasm, doubt, or facial expression, was considered to be a decisive factor. But, by making this choice, the research has also become restricted somewhat. The interviews needed to become more structured, in order to give any indication about the length of time expected from the respondent, and subsequently to also make sure the research questions would be answered within that time frame. Because the structuring of the interviews is left as open as possible, and because the cards only contained general measures which, in nature, could be applicable to all, this is considered to be an allowable restriction to the conversation and thereby the findings.

In general, the quality of the findings originating from interviews, are highly related to the qualities of the researcher as an interviewer. Becoming skilled in performing interviews is considered to be a learning process, and therefore it can't be assured that the quality of the interviews has been constant over time, and that this is not influential to the results. But, while preparing the interviews, during the interviews and during the analysis of the findings, this possible influence was kept in mind, and being watched for. Also, the semi-structured character of the interviews and the consciousness during the analysis, are considered to diminish this possible influence as much as possible.

The most important aspect of the methodology which may have been influential to the research findings is considered to be the amount of respondents participating in the research. It appeared that it was difficult to schedule the interviews in the most efficient way because of, as also already stated, the limited time available of the respondents, the time necessary to reach the respondents, and the

difficulty in getting in contact with the participants. Ideally, more forest and nature owners were wanted to participate, but, the research is exploratory, gaining a first insight, and because the various groups within the spectrum are considered present, this restriction on the implications of the findings is considered to be moderate. Another consequence of the amount of respondents is related to the larger forest and nature conservation organizations. The identities of these respondents are based on conversations with only one employee of the organization. The risk lies within the correlation between organizational identity and personal identity. The possibility that these respondents do not reflect the identity of the organization as a whole, but rather their own perceptions, is present. Ideally, therefore more employees of the same organization are to be interviewed. Within the analysis of the findings, this possible consequence is taken into consideration. For example, if a respondent indicated: "Personally I think that..., but within the organization we consider ...". In those instances the considerations of the organization are used within the analysis. But, it cannot be assured that the analysis has been able to filter this completely out. The smaller private forest owners, who often are responsible for the complete vision and management themselves, are also expected to have some diffusion between the forest owner identity and the personal identity. But, it is not possible to differentiate between them, as the forest owner *is* the person and vice versa.

The choice to analyse the interview transcripts by using categories also reflects within the findings. But, the aim has constantly been to keep the character of the analysis as open as possible, in order to be able to detect the diversity among the owners in the best possible way. The categories were considered necessary in order to be able to judge the level and the extent of the diversity among them. During the analysis every category gained its own characteristics and restrictions. By performing the same analysis twice, generating the same outcome, the method of division of the parts of the interview transcripts over the categories is considered admissible.

6 Conclusions and recommendations

6.1 Introduction

This chapter will outline the conclusions and recommendations which follow from the research. The first paragraph (§ 6.2) will provide the conclusions of this research, based on the results as presented earlier. The second paragraph (§ 6.3) considers the recommendations that can be made based on these conclusions. The recommendations are divided into two parts, the first part outlines the recommendations for future research while the last part indicates recommendations for policy and management on this research topic.

6.2 Conclusions

The first part of this research has focussed explicitly on the identity of Dutch forest and nature owners. The aim was to detect the characteristics of the identities and assess the extent in which the owners differ. The analysis of the conversations with the respondents indicate that any differences between the forest and nature owners can not be traced back to core differentiating convictions, but are the result of practical considerations, rules, regulations and obligations. Only the Recreation Association is considered to differentiate itself from the other respondents. To the Recreation Association, the visitor always comes in first place. To the other respondents this place is taken by or shared with nature. The Recreation Association did also indicate that they do not see themselves as a forest and nature conservationist first.

But, this may not lead to the conclusion that all the other owners do not differ at their core, their identity, would be too strongly put. Within the sensemaking process the identity is one of the elements in which action is shaped, but many elements are influential and to different extents. Also, every owner is limited, for example by means of size or setting of the area, by rules and regulations, or by a lack of financial means or time. This research indicates that within the process in which action is shaped these practical considerations play a large role. This might in turn result in a blurred vision in which the elements of self of the management can not be detected.

The second part of this research was dedicated to a search for the image of the respondents. The main aim was to detect whether there was a difference between the owners' identity and the manner in which they are viewed by others. The concept of image is highly related to the concept of identity, and they are both of importance within the sensemaking process. This part of the research was a case of 'real' identity versus 'perceived' identity.

But, the respondents seemed reluctant to offer their opinion about others. Some of the respondents had no idea about the kind of owner their colleague is. Often this was because some of the respondents are only locally known, they have often one area and are only locally known. However, it is considered remarkable that many respondents indicated to know little or even nothing about the management practices of some of the larger players within the field. Overall, the image of others and the image the owners relate to themselves does not differ much.

Both identity and image are considered difficult concepts because they are hidden within and are often only loosely defined. The aim of this research has been to assess whether the Dutch forest and nature owners were different. Or, could it be that they all be the same? Even within their deepest self? This research wasn't able to answer this question, more research is required. But, it did become clear that the management activities of the Dutch forest and nature owners often consists of making trade-offs in a network of restrictions and obligations.

6.3 Recommendations

6.3.1 *Further research*

By trying to gain insight into the identities of the forest and nature owners by means of their actions, it appears that this insight is difficult to gain. The reasons for doing something, or for doing something not, was expected to be a result of some core ideas of the respondents on what a forest and nature owner is, and what is considered important. In turn, it seemed that these reasons were only partly

based on these core ideas, but much more restricted by practical aspects, like rules, regulations, lack of means, and site restrictions. Within the theoretical framework, this influence of the existing restrictions on the actions was already acknowledged. But, for future research to be successful in gaining (further) insight into the forest and nature owners, their identities and their differences, an approach is needed in which the practical considerations are put more at the side line. This would then allow for gaining a better insight in the identities and the differences. This can be done by approaching the identities of the owners from another way, not with the actions within the field as basis, but by using another element of the sensemaking process. Both action and identity are important within the theoretical framework of this research, but future research might focus on approaching the identity from a different point of view. This appears to be difficult, the forest and nature owners are in first place always forest and nature managers, so the management is considered to be always relevant.

Most importantly, future research must aim to increase the amount of respondents, to include more groups of forest and nature owners. This would make the research much more costly and time consuming, but the differences among the forest and nature owners are essentially best found when all owners participate. This of course would be the most ideal situation, and difficult to reach. But, to reach as many people as possible is considered to be an important aim.

The identity is based on core ideas, but the labels used to describe these are influenced by time. To gain insight in the identities it might be interesting to research the identities of the owners for a longer period of time, in which the identity is researched every decade, for instance. This would allow to detect the changes in meaning of the labels, and ultimately would then reveal the stable core. For private forest owners this might prove to be different. The identity of such owners is much more based on personal identity, rather than a common organizational identity. The identity a private forest owner has as a person is highly related to the kind of forest owner he is. For organizations such research thus might prove to be more easy.

Future research on image might be more successful when the research is more anonymous, for instance by means of written response. The respondent might then feel less obliged to the researcher to provide socially acceptable answers. But, the level of honesty is, in turn, much more difficult to detect. A respondent is expected to lie less easily to a person, face-to-face, than on paper. Knowledge on images is only valuable if the images are true, therefore it is considered of great importance to aim for the highest level of honesty within future research on image.

6.3.2 *Policy and management*

This research does indicate some recommendations for policy and management. The respondents share the feeling of social responsibilities as manager of Dutch forest and nature. This is reflected in the level in which the public and cultural heritage play a part in their management considerations. This similarity between the owners provides opportunities for cooperation and complementation. For instance, to some respondents the preservation or restoration of elements of cultural heritage is too costly. If regional forest and nature owners would learn about each other's wishes, this would provide opportunities to commonly achieve such goals. This would not only benefit a single forest or nature area, or owner, but would provide possibilities to enhance the attraction and value of complete regions and landscapes.

To learn about each other's wishes can be considered a general recommendation for policy makers as well. It appears that many owners have little insight in the practices of their closest neighbours. But, it might be profitable to many owners if they knew about the plans and activities of others. Especially to smaller forest owners, working together during the thinning or harvest, or to sell the timber commonly, could provide them with financial benefits. But also to facilitate forest and nature areas to be connected, creating larger and continuous areas, would become more easily if owners knew of each other that they are willing. Some of the respondents indicated that this process was already ongoing, but not to all owners is cooperation common practice.

To reach goals more easily, to reach common goals, and in order to bring the forest and nature areas within the Netherlands to a higher plan, are worthy of striving for. This can be achieved by bringing owners in contact with each other, or by providing incentives to do so. These attempts are already in place to some extent, but still, progress is still needed to be made.

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APPENDIX I

THEME	MEASURE	GROUP #	GROUP
Recreation	To zone	1a	YES, as an opportunity to deal with, to steer and to rearrange the inevitable presence of the public.
		1b	YES, as an opportunity to alleviate pressure and disturbance of specific areas.
		1c	YES, as an opportunity to lead the public to existing hot-spots and concentrate their presence (to alleviate pressure and disturbance of specific areas).
	To install resting areas	2a	YES, to provide rest and quiet to wildlife and birds.
		2b	NO, the areas are considered large enough to provide the animals with sufficient rest and quietness.
		2c	NO, rather use zoning then completely restrict admittance.
	To manage paths and roads	3a	The provision of a path for disabled persons.
		3b	The provision of a path for mountainbikers.
		3c	Only providing opportunities to walk.
		3d	Explicitly making a division between park forest and other forest area in management intensity.
	To provide recreational facilities	4b	High level.
		4c	Medium level.
		4d	Small level.
		4e	Low level.
Cultural heritage	Management of cultural heritage	5	YES, done by all respondents.
	To manage coppice wood	6a	YES, to create a highly valued habitat and to preserve cultural heritage.
		6b	NO, not willing to put in the necessary effort to maintain the coppice wood.
Management of heath land	7a	YES, to maintain a habitat which is highly valued as cultural heritage and for its value for nature.	
Nature orientation	Management of exotic or introduced species	8a	YES, similar level: moderately active.
		8b	YES, similar level: little active.
		8c	NO, no management of exotic or introduced species; removal is unwanted.
	To leave dead animal bodies	9a	YES, in order to stimulate natural processes.
		9b	NO, dead animals are used to generate income.
	To manage forest edges	10a	YES, to create a more natural system, both with regard to the landscape sight as well as to attract specific species.
		10b	NO, the forest area is too narrow.
	To increase the amount of dead wood	11a	YES, but only started recently.
		11b	YES, to increase the naturalness of the area and to stimulate species.
		11c	NO, dead wood will become present in time.
		11d	NO, possible gains of the wood is considered to have priority.
	To do nothing	12a	YES, in subareas, to enable natural processes to occur, to stimulate species or biodiversity and to monitor and provide insight in the processes and 'results' in order to create a better understanding of natural systems.
		12b	YES, but no conscious decision.
		12c	NO, restricted by rules and regulations and would diminish income possibilities.
	Thinning (without harvest) in rising forest	13a	YES, to reach specific goals within an area, like natural values.
13b		NO, no thinning at all.	
Timber production	Thinning (without harvest) in rising forest	13c	NO, only thinning with harvest to provide income and in order to stimulate future timber harvest.
	Timber harvest in rising forest	14a	YES, explicitly to generate income, harvest within whole area.
		14b	YES, to reach specific goals and to generate income, harvest in selected areas.
		14c	NO, not compatible with nature oriented vision.
Intensely managed habitats	To manage coppice wood	6a	YES, to create a highly valued habitat and to preserve cultural heritage.
		6b	NO, not willing to put in the necessary effort to maintain the coppice wood.
	To manage forest edges	10a	YES, to create a more natural system, both with regard to the landscape sight as well as to attract specific species.
		10b	NO, the forest area is too narrow.
	To remove unwanted vegetation	15a	YES, to maintain specific sites or habitats.
		15b	YES, only <i>Betula</i>
		15c	NO, only <i>Prunus serotina</i>
	To till the soil	16a	YES, moderately active to stimulate growth, attract species or to create the wanted starting point.
		16b	YES, active to create and maintain specific areas for recreational purpose.
16c		NO, not necessary.	
Conversion	To till the soil	16a	YES, moderately active to stimulate growth, attract species or to create the wanted starting point.
		16b	YES, active to create and maintain specific areas for recreational purpose.
		16c	NO, not necessary.
	Conversion management	17	YES, to develop the area towards a more natural state.
	To construct waterways or drainage	18a	YES, for owner specific reasons, to maintain or create a habitat or site with specific characteristics and needs.

Table I Division of groups within theme 'recreation' among respondents (group perspective)

RECREATION	1a	1b	1c	2a	2b	3a	3b	3c	3d	4b	4c	4d	4e
Estate owner	■			■					■			■	
Kroondomeinen		■	■	■							■		
Landscape Noord-Holland		■				■				■			
Ministry of Defence		■	■		■		■					■	
Municipality		■		■	■							■	
Nature Monuments		■			■	■					■		
Private forest owner (1)	■			■	■			■					■
Private forest owner (2)	■			■	■			■					■
Recreation Association		■				■	■						
State Forest Service		■		■		■	■			■			

Group belonging to respondent
 Group not relevant to respondent

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Table II Division of groups among the respondents within theme 'recreation' (respondent perspective)

RECREATION	Estate owner	Kroondomeinen	Landscape Noord-Holland	Ministry of Defence	Municipality	Nature Monuments	Private forest owner (1)	Private forest owner (2)	Recreation Association	State Forest Service
Estate owner	■	2a,3d	2a	4d	4d		1a	1a		2a
Kroondomeinen	2a,3d	■	1b,2a	1b,1c	1b,1c	1b,4c			1b	1b,2a
Landscape Noord-Holland	2a	1b,2a	■	1b	1b	1b,3a			1b,3a	1b,2a,3a,4b
Ministry of Defence	4d	1b,1c	1b	■	1b,1c,3b,4d	1b,2b,3b			1b,3b	1b,3b
Municipality	4d	1b,1c	1b	1b,1c,3b,4d	■	1b,3b			1b,3b	1b,3b
Nature Monuments		1b,4c	1b,3a	1b,2b,3b	1b,3b	■			1b,3a,3b	1b,3a,3b
Private forest owner (1)	1a							1a,3c,4e		
Private forest owner (2)	1a						1a,3c,4e	■		
Recreation Association		1b	1b,3a	1b,3b	1b,3b	1b,3a,3b			■	1b,3a,3b
State Forest Service	2a	1b,2a	1b,2a,3a,4b	1b,3b	1b,3b	1b,3a,3b			1b,3a,3b	■

Table III Amount of groups shared with other respondents (recreation)

Estate owner (2) Kroondomeinen (1) Landscape Noord-Holland (1) Municipality (1) Private forest owner (1) (1) Private forest owner (2) (1) Ministry of Defence (0) Nature Monuments (0) Recreation Association (0) State Forest Service	Kroondomeinen (2) Estate owner (2) Landscape Noord-Holland (2) Ministry of Defence (2) Municipality (2) Nature Monuments (1) Recreation Association (1) State Forest Service (0) Private forest owner (1) (0) Private forest owner (2)	Landscape Noord-Holland (4) State Forest Service (2) Kroondomeinen (2) Nature Monuments (2) Recreation Association (1) Estate owner (1) Ministry of Defence (1) Municipality (0) Private forest owner (1) (0) Private forest owner (2)	Ministry of Defence (4) Municipality (3) Nature Monuments (2) Kroondomeinen (2) Recreation Association (2) State Forest Service (1) Landscape Noord-Holland (1) Estate owner (0) Private forest owner (1) (0) Private forest owner (2)	Municipality (4) Ministry of Defence (2) Kroondomeinen (2) Nature Monuments (2) Recreation Association (2) State Forest Service (1) Estate owner (1) Landscape Noord-Holland (0) Private forest owner (1) (0) Private forest owner (2)
Nature Monuments (3) Ministry of Defence (3) Recreation Association (3) State Forest Service (2) Kroondomeinen (2) Landscape Noord-Holland (2) Municipality (0) Estate owner (0) Private forest owner (1) (0) Private forest owner (2)	Private forest owner (1) (3) Private forest owner (2) (1) Estate owner (0) Kroondomeinen (0) Landscape Noord-Holland (0) Ministry of Defence (0) Municipality (0) Nature Monuments (0) Recreation Association (0) State Forest Service	Private forest owner (2) (3) Private forest owner (1) (1) Estate owner (0) Kroondomeinen (0) Landscape Noord-Holland (0) Ministry of Defence (0) Municipality (0) Nature Monuments (0) Recreation Association (0) State Forest Service	Recreation Association (3) Nature Monuments (3) State Forest Service (2) Landscape Noord-Holland (2) Ministry of Defence (2) Municipality (1) Kroondomeinen (0) Estate owner (0) Private forest owner (1) (0) Private forest owner (2)	State Forest Service (4) Landscape Noord-Holland (3) Nature Monuments (3) Recreation Association (2) Kroondomeinen (2) Ministry of Defence (2) Municipality (1) Estate owner (0) Private forest owner (1) (0) Private forest owner (2)

Table IV Division of groups within theme 'cultural heritage' among respondents (respondent perspective)

CULTURAL HERITAGE	5	6a	6b	7a
Estate owner	■	■	■	■
Kroondomeinen	■	■	■	■
Landscape Noord-Holland	■	■	■	■
Ministry of Defence	■	■	■	■
Municipality	■	■	■	■
Nature Monuments	■	■	■	■
Private forest owner (1)	■	■	■	■
Private forest owner (2)	■	■	■	■
Recreation Association	■	■	■	■
State Forest Service	■	■	■	■

Group belonging to respondent
 Group not relevant to respondent

Table V Division of groups among respondents within theme 'cultural heritage' (group perspective)

CULTURAL HERITAGE	Estate owner	Kroondomeinen	Landscape Noord-Holland	Ministry of Defence	Municipality	Nature Monuments	Private forest owner (1)	Private forest owner (2)	Recreation Association	State Forest Service
Estate owner	■	5,7a	5,6a,7a	5,7a	5,7a	5,6a,7a	5	5	5,6a,7a	5,6a,7a
Kroondomeinen	5,7a	■	5,7a	5,6b,7a	5,7a	5,7a	5	5	5,7a	5,7a
Landscape Noord-Holland	5,6a,7a	5,7a	■	5,7a	5,7a	5,6a,7a	5	5	5,6a,7a	5,6a,7a
Ministry of Defence	5,7a	5,6b,7a	5,7a	■	5,7a	5,7a	5	5	5,7a	5,7a
Municipality	5,7a	5,7a	5,7a	5,7a	■	5,7a	5	5	5,7a	5,7a
Nature Monuments	5,6a,7a	5,7a	5,6a,7a	5,7a	5,7a	■	5	5	5,6a,7a	5,6a,7a
Private forest owner (1)	5	5	5	5	5	5	■	5	5	5
Private forest owner (2)	5	5	5	5	5	5	5	■	5	5
Recreation Association	5,6a,7a	5,7a	5,6a,7a	5,7a	5,7a	5,6a,7a	5	5	■	5,6a,7a
State Forest Service	5,6a,7a	5,7a	5,6a,7a	5,7a	5,7a	5,6a,7a	5	5	5,6a,7a	■

Table VI Division of groups within theme 'nature orientation' among respondents (respondent perspective)

NATURE ORIENTATION	8a	8b	8c	9a	9b	10a	10b	11a	11b	11c	11d	12a	12b	12c	13a
Estate owner															
Kroondomeinen															
Landscape Noord-Holland															
Ministry of Defence															
Municipality															
Nature Monuments															
Private forest owner (1)															
Private forest owner (2)															
Recreation Association															
State Forest Service															

Group belonging to respondent
 Group not relevant to respondent

Table VII Division of groups among respondents within theme 'nature orientation' (group perspective)

NATURE ORIENTATION	Estate owner	Kroondomeinen	Landscape Noord-Holland	Ministry of Defence	Municipality	Nature Monuments	Private forest owner (1)	Private forest owner (2)	Recreation Association	State Forest Service
Estate owner		10a	10a	10a	10a	10a	12c	8b,11d,12c	10a	10a
Kroondomeinen	10a		8a,9a,10a,12a	8a,9a,10a,11b,12a	8a,9a,10a,11b,12a	8a,9a,10a,12a	11b		10a,11b	8a,9a,10a,11b,12a
Landscape Noord-Holland	10a	8a,9a,10a,12a		8a,9a,10a,12a	8a,9a,10a,12a	8a,9a,10a,11c,12a			10a	8a,9a,10a,12a
Ministry of Defence	10a	8a,9a,10a,11b,12a	8a,9a,10a,12a		8a,9a,10a,11b,12a	8a,9a,10a,12a,13a	11b		10a,11b,13a	8a,9a,10a,11b,12a
Municipality	10a	8a,9a,10a,11b,12a	8a,9a,10a,12a	8a,9a,10a,11b,12a		8a,9a,10a,12a	11a,11b		10a,11b	8a,9a,10a,11b,12a
Nature Monuments	10a	8a,9a,10a,12a	8a,9a,10a,11c,12a	8a,9a,10a,12a,13a	8a,9a,10a,12a				10a,13a	8a,9a,10a,12a
Private forest owner (1)	12c	11b		11b	11a,11b			12c	8c,11b	11b
Private forest owner (2)	8b,11d,12c						12c			
Recreation Association	10a	10a,11b	10a	10a,11b,13a	10a,11b	10a,13a	8c,11b			10a,11b
State Forest Service	10a	8a,9a,10a,11b,12a	8a,9a,10a,12a	8a,9a,10a,11b,12a	8a,9a,10a,11b,12a	8a,9a,10a,12a	11b		10a,11b	

Table VIII Amount of groups shared with other respondents (nature orientation)

Estate owner	Kroondomeinen	Landscape Noord-Holland	Ministry of Defence	Municipality
(3) Private forest owner (2)	(5) Ministry of Defence	(5) Nature Monuments	(5) Kroondomeinen	(5) Kroondomeinen
(1) Kroondomeinen	(5) Municipality	(4) Kroondomeinen	(5) Municipality	(5) Ministry of Defence
(1) Landscape Noord-Holland	(5) State Forest Service	(4) Ministry of Defence	(5) Nature Monuments	(5) State Forest Service
(1) Ministry of Defence	(4) Landscape Noord-Holland	(4) Municipality	(5) State Forest Service	(4) Landscape Noord-Holland
(1) Municipality	(4) Nature Monuments	(4) State Forest Service	(4) Landscape Noord-Holland	(4) Nature Monuments
(1) Nature Monuments	(2) Recreation Association	(1) Estate owner	(3) Recreation Association	(2) Private forest owner (1)
(1) Private forest owner (1)	(1) Estate owner	(1) Recreation Association	(1) Estate owner	(2) Recreation Association
(1) Recreation Association	(1) Private forest owner (1)	(0) Private forest owner (1)	(1) Private forest owner (1)	(1) Estate owner
(1) State Forest Service	(0) Private forest owner (2)	(0) Private forest owner (2)	(0) Private forest owner (2)	(0) Private forest owner (2)
Nature Monuments	Private forest owner (1)	Private forest owner (2)	Recreation Association	State Forest Service
(5) Landscape Noord-Holland	(2) Municipality	(3) Estate owner	(3) Ministry of Defence	(5) Kroondomeinen
(5) Ministry of Defence	(2) Recreation Association	(1) Private forest owner (1)	(2) Kroondomeinen	(5) Ministry of Defence
(4) Kroondomeinen	(1) Estate owner	(0) Kroondomeinen	(2) Municipality	(5) Municipality
(4) Municipality	(1) Kroondomeinen	(0) Landscape Noord-Holland	(2) Nature Monuments	(4) Landscape Noord-Holland
(4) State Forest Service	(1) Ministry of Defence	(0) Ministry of Defence	(2) Private forest owner (1)	(4) Nature Monuments
(2) Recreation Association	(1) Private forest owner (2)	(0) Municipality	(2) State Forest Service	(2) Recreation Association
(1) Estate owner	(0) Landscape Noord-Holland	(0) Nature Monuments	(1) Estate owner	(1) Estate owner
(0) Private forest owner (1)	(0) Nature Monuments	(0) Recreation Association	(1) Landscape Noord-Holland	(1) Private forest owner (1)
(0) Private forest owner (2)	(0) State Forest Service	(0) State Forest Service	(0) Private forest owner (2)	(0) Private forest owner (2)

Table IX Division of groups within theme 'timber production' among respondents (respondent perspective)

TIMBER PRODUCTION	13c	14a	14b	14c
Estate owner	■	■	■	■
Kroondomeinen	■	■	■	■
Landscape Noord-Holland	■	■	■	■
Ministry of Defence	■	■	■	■
Municipality	■	■	■	■
Nature Monuments	■	■	■	■
Private forest owner (1)	■	■	■	■
Private forest owner (2)	■	■	■	■
Recreation Association	■	■	■	■
State Forest Service	■	■	■	■

■ Group belonging to respondent
 ■ Group not relevant to respondent

57 Table X Division of groups among respondents within theme 'timber production' (group perspective)

TIMBER PRODUCTION	Estate owner	Kroondomeinen	Landscape Noord-Holland	Ministry of Defence	Municipality	Nature Monuments	Private forest owner (1)	Private forest owner (2)	Recreation Association	State Forest Service
Estate owner	■	13c			13c		13c,14a	13c,14a		13c
Kroondomeinen	13c	■			13c,14b	14b	13c	13c		13c, 14b
Landscape Noord-Holland			■	14c						
Ministry of Defence			14c	■						
Municipality	13c	13c,14b			■	14b	13c	13c		13c,14b
Nature Monuments		14b			14b	■				14b
Private forest owner (1)	13c,14a	13c			13c		■	13c,14a		13c
Private forest owner (2)	13c,14a	13c			13c		13c, 14a	■		13c
Recreation Association									■	
State Forest Service	13c	13c,14b			13c,14b	14b	13c	13c		■

Table XI Division of groups within theme 'intensely managed habitats' among respondents (respondent perspective)

INTENSELY MANAGED HABITATS	6a	6b	10a	10b	15a	15b	15c	16a	16b	16c
Estate owner	■		■		■			■		
Kroondomeinen		■	■				■	■		
Landscape Noord-Holland	■		■							■
Ministry of Defence		■	■				■			■
Municipality	■	■						■		
Nature Monuments	■		■		■		■			
Private forest owner (1)	■	■		■		■				
Private forest owner (2)	■	■	■	■			■			
Recreation Association	■		■		■				■	
State Forest Service								■		

Group belonging to respondent
 Group not relevant to respondent

Table XII Division of groups among respondents within theme 'intensely managed habitats' (group perspective)

INTENSELY MANAGED HABITATS	Estate owner	Kroondomeinen	Landscape Noord-Holland	Ministry of Defence	Municipality	Nature Monuments	Private forest owner (1)	Private forest owner (2)	Recreation Association	State Forest Service
Estate owner	■	10a,16a	6a,10a,15a,16a	10a	10a,16a	6a,10a,15a,16a	16a	16a	6a,10a,15a	6a,10a,15a,16a
Kroondomeinen	10a,16a	■	10a,16a	6b,10a,15c	10a,15c,16a	10a,16a	16a	15c,16a	10a	10a,16a
Landscape Noord-Holland	6a,10a,15a,16a	10a,16a	■	10a	10a,16a	6a,10a,15a,16a	16a	16a	6a,10a,15a	6a,10a,15a,16a
Ministry of Defence	10a	6b,10a,15c	10a	■	10a,15c	10a		15c,16a	10a	10a
Municipality	10a,16a	10a,15c,16a	10a,16a	10a,15c	■	10a,16a	16a	15c,16a	10a	10a,16a
Nature Monuments	6a,10a,15a,16a	10a,16a	6a,10a,15a,16a	10a	10a,16a	■	16a	16a	6a,10a,15a	6a,10a,15a,16a
Private forest owner (1)	16a	16a	16a		16a	16a	■	16a		16a
Private forest owner (2)	16a	15c,16a	16a	15c,16a	15c,16a	16a	16a	■		16a
Recreation Association	6a,10a,15a	10a	6a,10a,15a	10a	10a	6a,10a,15a			■	6a,10a,15a
State Forest Service	6a,10a,15a,16a	10a,16a	6a,10a,15a,16a	10a	10a,16a	6a,10a,15a,16a	16a	16a	6a,10a,15a	■

Table XIII Amount of groups shared with other respondents (intensely managed habitats)

Estate owner (4) Landscape Noord-Holland (4) Nature Monuments (4) State Forest Service (3) Recreation Association (2) Kroondomeinen (2) Municipality (1) Ministry of Defence (1) Private forest owner (1) (1) Private forest owner (2)	Kroondomeinen (3) Ministry of defence (3) Municipality (2) Estate owner (2) Landscape Noord-Holland (2) Nature Monuments (2) Private forest owner (2) (2) State Forest Service (1) Private forest owner (1) (1) Recreation Association	Landscape Noord-Holland (4) Estate owner (4) Nature Monuments (4) State Forest Service (3) Recreation Association (2) Kroondomeinen (2) Municipality (1) Ministry of Defence (1) Private forest owner (1) (1) Private forest owner (2)	Ministry of Defence (3) Kroondomeinen (2) Municipality (2) Private forest owner (2) (1) Estate owner (1) Landscape Noord-Holland (1) Nature Monuments (1) Recreation Association (1) State Forest Service (0) Private forest owner (1)	Municipality (3) Kroondomeinen (2) Estate owner (2) Landscape Noord-Holland (2) Ministry of Defence (2) Nature Monuments (2) Private forest owner (2) (2) State Forest Service (1) Private forest owner (1) (1) Recreation Association
Nature Monuments (4) Estate owner (4) Landscape Noord-Holland (4) State Forest Service (3) Recreation Association (2) Kroondomeinen (2) Municipality (1) Ministry of Defence (1) Private forest owner (1) (1) Private forest owner (2)	Private forest owner (1) (1) Estate owner (1) Kroondomeinen (1) Landscape Noord-Holland (1) Municipality (1) Nature Monuments (1) Private forest owner (2) (1) State Forest Service (0) Ministry of Defence (0) Recreation Association	Private forest owner (2) (2) Kroondomeinen (2) Municipality (1) Estate owner (1) Landscape Noord-Holland (1) Ministry of Defence (1) Nature Monuments (1) Private forest owner (1) (1) State Forest Service (0) Recreation Association	Recreation Association (3) Estate owner (3) Landscape Noord-Holland (3) Nature Monuments (3) State Forest Service (1) Kroondomeinen (1) Ministry of Defence (1) Municipality (0) Private forest owner (1) (0) Private forest owner (2)	State Forest Service (4) Estate owner (4) Landscape Noord-Holland (4) Nature Monuments (3) Recreation Association (2) Kroondomeinen (2) Municipality (1) Ministry of Defence (1) Private forest owner (1) (1) Private forest owner (2)

Table XIV Division of groups within theme 'conversion' among respondents (respondent perspective)

CONVERSION	16a	16b	16c	17	18a
Estate owner					
Kroondomeinen					
Landscape Noord-Holland					
Ministry of Defence					
Municipality					
Nature Monuments					
Private forest owner (1)					
Private forest owner (2)					
Recreation Association					
State Forest Service					

Table XV Division of groups among respondents within theme 'conversion' (group perspective)

CONVERSION	Estate owner	Kroondomeinen	Landscape Noord-Holland	Ministry of Defence	Municipality	Nature Monuments	Private forest owner (1)	Private forest owner (2)	Recreation Association	State Forest Service
Estate owner		16a,17	16a,17,18a	17,18a	16a,17	16a,17,18a	16a,17	16a,17	17,18a	16a,17,18a
Kroondomeinen	16a,17		16a,17	17	16a,17	16a,17	16a,17	16a,17	17	16a,17
Landscape Noord-Holland	16a,17,18a	16a,17		17,18a	16a,17	16a,17,18a	16a,17	16a,17	17,18a	16a,17,18a
Ministry of Defence	17,18a	17	17,18a		17	17,18a	17	17	17,18a	17,18a
Municipality	16a,17	16a,17	16a,17	17		16a,17	16a,17	16a,17	17	16a,17
Nature Monuments	16a,17,18a	16a,17	16a,17,18a	17,18a	16a,17		16a,17	16a,17	17,18a	16a,17,18a
Private forest owner (1)	16a,17	16a,17	16a,17	17	16a,17	16a,17		16a,17	17	16a,17
Private forest owner (2)	16a,17	16a,17	16a,17	17	16a,17	16a,17	16a,17		17	16a,17
Recreation Association	17,18a	17	17,18a	17,18a	17	17,18a	17	17		17,18a
State Forest Service	16a,17,18a	16a,17	16a,17,18a	17,18a	16a,17	16a,17,18a	16a,17	16a,17	17,18a	