

What is a forest? What is forestry?

Science on boundaries

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Mijnheer de Rector Magnificus, dames en heren,

The questions "what is a forest? what is forestry?" in the title of my presentation might sound like strange questions to ask for someone who has been recently appointed professor for forest policy and forest management at Wageningen University. But don't worry, I am not going to fundamentally question everything or to take you on a journey into radical relativism.

Let's start with what can easily be agreed on:

1. Forests are important: forests provide a huge variety of important services to human welfare, ranging from the provision of resources, through protection and regulatory functions to spiritual values. Some try to put a value on the functions of forests - mainly in relation to other ecosystems - and indicate that forests count for about 30% of the total value of terrestrial ecosystem services to human welfare (Costanza et al. 1997). Other scholars - probably less optimistic about the usefulness of monetary valuation - point out, that forests in principle have an unlimited value as central life support systems.

2. Forests are in demand: particularly in highly industrialised and urbanised countries we very often overlook how dependent people are in their daily life on forest products and services. If we just think of the many wooden things and structures we use or rely on every day - the huge amount of paper we consume, the many things such as fibres and medicines we depend on - without even realising that they are forest products - this gives us a first impression of the enormous pressure that is put on forests. Another important reminder of the pressures on forests is the fact that over 55% of the world's energy supply still comes from wood.

3. Forests are vulnerable: despite the many services forests provide for human welfare, their value and their importance are not unequivocally and equally shared by all actors. Rather we notice that the time and efforts needed to maintain, restore, establish or

re-establish forests are counteracted by competing interests, such as for example the necessities for daily survival. The resulting views of forests as obstacles, as reserve spaces or as pure sources for exploitation are in consequence threatening the existence of forests themselves.

However these three aspects make up about the total of what is agreed about in relation to forests. Considering the long history of coordinated forest uses and the long tradition of forestry science, it seems amazing that there is such a large degree of disagreement, and a large variation in positions and statements on most other forest issues. The variety of forests can only be considered a minor explanation, as most of the the disagreement holds true for all situations.

The difficulties begin as soon as one asks the question what is actually a forest? And what is actually forestry? If we take a closer look at these questions by examining the relevant literature on these topics, we encounter a bewildering number of definitions and understandings, often contradictory and sometimes even mutually exclusive. And I am almost sure we would find the same variety of answers here in the audience, if I were to ask you to close your eyes for some seconds and to think about what you would describe as a forest and what you would call forestry.

It is exactly this disagreement, this variety in responses that convince me that the values and pressures put on forests are important research issues. They are not, however, the central challenge for science in the fields of forest policy and forest management. In my view these values and pressures can only adequately be understood, if science tries to look beyond these aspects. A promising and comprehensive frame for doing this seems to focus on boundaries, with their different qualities and functions.

The focus on boundaries becomes comprehensible if one thinks of the central role boundaries play in our daily life. Human nature is apparently not sufficiently able to cope with feelings such as

boundlessness, infiniteness, or endlessness (Hartman and Draisma 1997: 158). However, in the daily interactions with our physical and social environments we are continuously confronted with exactly these feelings of boundlessness, infiniteness, endlessness, and the uncertainties that arise from them. In an attempt to reduce these uncertainties, people therefore constantly seek boundaries. It is boundaries that provide us with the certainties we need in order to make decisions in our daily life. We need boundaries to define, to structure, and to identify ourselves with situations and things. Of course, the understanding of a boundary is in no way limited to the physical-spatial quality, but includes mental and social qualities as well.

In the following I will present some examples for the functions of boundaries in relation to forests and forestry, and describe the effects they have on forest policy and forest management. My intention is to demonstrate the suitability of the concept of boundaries as a comprehensive framework for the scientific analysis of the relation between forests and people.

Boundaries define!

Out of the lasting discussions on deforestation and the destruction of forests on a world-wide scale one would expect that there is - at least to a large extent - agreement about the boundaries defining a forest. The fact, however, that despite modern inventory techniques there are almost no reliable and consistent data on the world's forest cover is already an indication that this expectation doesn't hold true. We are faced with the fact that there is not just one, but a huge variety of definitions indicating accordingly a huge variety of boundaries that require definition.

Scholars have compiled more than 150 different definitions of forests, with thresholds for tree cover varying from 0% to 75% canopy cover (Lund 1998). Definitions of forests have been grouped into the understanding of a forest (1) as a legal or administra-

tive unit, (2) as a land-cover, and (3) as a land use. One could leave this very easily in the sphere of a purely academic discussion on definitions. However, it makes a big difference how boundaries are drawn. If defined as a legal unit, a forest stays as a "forest" even it has been completely cut down and the "forest" is no longer fulfilling its original functions. Or what about urban forests if forests are defined as a land-cover? In highly urbanised countries such as the Netherlands urban "forests" play a particularly important role. But can they be seen as forests if they do not have their own micro-climate? And what is the difference between a forest and a park? Or take the tropics and subtropics: agroforestry systems are seen there as a promising means to provide people with healthy food in a safe environment - but can they be defined as forests in the sense of a land-cover? And how much of our forest products really come from "forests" when forests are defined as a land-cover? Not only fuel wood cutting very often takes place outside what could be called a "forest" - think for example about the characteristic Dutch landscape element of roadside plantings.

Unequivocally different boundaries result in different "forests", and subsequently in a completely different perception of problems and solutions in relation to the value and use of forests. One of the most compelling questions of our time, namely to ensure a liveable environment for the future, hinges on whether we are indeed facing a dramatic loss of forests or not. The answer to this depends to great extent on how boundaries are drawn. But different boundaries can also have severe social, financial and political effects on a less abstract level, for example in terms of which societal interests are met, which actors are affected, which forest functions are ensured or who is responsible for their protection.

Struggles for an appropriate definition of forests are therefore in no way purely theoretical discussions. Focusing on the function of boundaries to define is relevant, as it reveals the variety in possible descriptions of a situation in a certain context. It thereby already provides an indication of the problems associated with the situation and the possible ways to overcome them.

Boundaries structurel

The setting of boundaries provides structure for orientation, comparison and positioning. The many different representations of forests that have been developed in different societal and natural contexts, as well as their changes over time (Schmithuesen 1996) indicate that boundaries as structures play an important role in forest policy and forest management.

It seems obvious that the relative importance of different forest functions to different actors can lead to different forest representations. The recreationist's representation of a forest may consist mainly of dots and lines, representing the spots where he rested or where she walked. The forest manager's representation is probably more in accordance with the total spatial expanse, even though the inner structure she creates might differ completely from that of her colleague in the same management institution (Richardson et al. 1996). And people who fear for endangered species structure a forest by different boundaries than people who have the feeling that experiences such as quietness or beauty are endangered (Schroeder 1996). We should not forget to mention people who think about forests in categories of endangered products, such as timber, or endangered symbols, for example as an equation of life with continuous circles of abundance and growth. This list is almost endless.

However, different forest functions are not the only reason for the variation in how boundaries are used to structure forests. As has been shown in different studies, it is not only underlying interests and cultural biases (Schanz 1996a), as well as emotions (Schroeder 1996), but also different knowledge levels that inevitably lead to different forest boundaries, to a completely different forest in our minds. 'Sensemaking', grounded in both individual and social activity (Weick 1995), is another important reason for different boundaries structure.

The many functions of forests and the many people affected by

these make it clear that the function of boundaries to structure matters in a very particular way in the field of forest policy and forest management. One of the consequences of the diversity of boundaries structure may be a complete lack of understanding between different actors. Although actors are assuming that discussions are about one and the same forest, they might in fact be talking about completely different "forests" (Schanz 1996b). Setting different boundaries can furthermore result in completely different ways of dealing with forests in the same situation, with a large range of ecological, financial and social effects. The latter seems to be a particularly important aspect in a field where intuition plays an important role in determining management decisions. Last but not least, the structural boundaries very often do not coincide with the given institutional or spatial forest boundaries in the respective context, thereby creating additional potential for conflicts over time (Lee 1990).

Focusing on the function of boundaries to structure is relevant as it allows us to reveal conflicts arising out of similar cases of different structural boundaries or the mismatch between structural and institutional boundaries. It thereby already provides an indication of the different layers of the conflicts and the ways in which we might be able to harmonise them.

Boundaries exclude or include?

Few of the given spatial or institutional forest boundaries are confined to the influences of forest conditions on people (or their actions) outside the boundaries, who have some stake in these conditions. But "forest conditions are as much an expression of the mutual exchanges and obligations among all forest interests as they are of the treatments chosen to serve one particular interest" (Romm 1993: 288/289). The setting of boundaries therefore also bears a social quality. In relation to forests the function of boundaries to exclude or include determines no more and no less than the answer to the question: what is forestry? And here we are also

confronted with a huge variety of answers: For example, are we talking about all forest interests, or only about the persons in charge, or those in a position to choose about how to deal with forest lands?

The effects of drawing different forest boundaries related to exclusiveness or inclusiveness can be severe on forest policy and forest management. The long prevailing tradition of "forestry" referring only to people who make decisions concerning concrete actions on forested land has at least partially led to forest management activities being excluded from their surrounding social realities (Glueck 1987). Empirical studies have shown that many of the conflicts concerning forest issues all over Europe can be traced back to this alignment (Hellstroem and Reunala 1995). Comparative studies furthermore indicate that the question of who is defining forestry - in the sense of who is the leading authority and which societal groups are seen and regard themselves as belonging to forestry - not only explains the differences in national forest policy planning approaches in different countries, but apparently also determines their success or failure to a considerable extent (Boon et al. 1999: 275).

As a logical consequence one has to realise that what we describe as forestry is only a snapshot of the truly continuous interactions of social forces at a given time and place. "Forestry" must be interpreted as a social field, which is continuously changing its appearance, depending on the setting and acceptance of different forest boundaries to include or to exclude interests and perspectives. Analyses of forestry are therefore completely arbitrary if they do not reflect the societal driving forces and correlations. Focusing on the function of boundaries to exclude or include is relevant in this context as it helps to reveal the underlying power exercised and struggles for authority. It can thereby also give an indication of the likelihood of implementation and realisation.

Science on boundaries

To conclude: I hope that these examples have made it clear why I am convinced that the concept of boundaries provides a promising framework for the scientific analysis of the relation between forests and people. It seems that many of the issues recently at stake in forest policy and forest management - conflicts, problems, and discussions - which seemingly do not have too much in common, can be traced back to one underlying aspect: that of boundaries. I therefore perceive science in the field of forest policy and forest management primarily as a science on boundaries.

Science on boundaries means thereby in the first instance questioning what we take as seemingly given. The primary research question is no longer the values and demands put on forests. I believe it should be precisely what has so often been the object of our research interest, namely forests and forestry. Underlying the shift of forests and forestry from object to subject of our research questions is the conviction that this will finally result in a deeper understanding of the values and demands put on forests.

This is not to say that all scientific research has to undergo this shift. However, in situations where impetus is provided by institutional changes - as is the case at the moment in the fields of forest policy and forest management (think of the development of supranational forest policy regimes mainly in the follow-up of the Rio-conference or the establishment of international forest certification schemes and their effects on forestry) - science runs the risk of stagnating and subsequently becoming socially irrelevant if the fixed ideas about values and demands put on forests are not supplemented with an understanding of the processes involved.

Science on boundaries means in the second instance taking all functions and qualities of a boundary - physical-spatial, mental, and social - similarly into account. The mental quality in particular requires a constructionist perspective. It is a misunderstanding to think that a constructionist doubts the existence of a real world.

We all live in the same physical world and we all share certain realities, as for example reflected in the fact that all the realists and materialists, idealists and constructionists here in the audience will all open the door before leaving this room (Ludewig 1992: 76). However it is becoming increasingly accepted that reality is nevertheless prone to the social construction of scientific and popular knowledge (Hannigan 1995: 188). The advantage of such a constructionist approach is to be seen above all in overcoming claims of absolutism in statements and positions, which ultimately can work as argumentative intimidation, since "objective" and thus "correct" practical constraints cannot be discussed. In forest policy and forest management, however, we are continuously confronted with 'wicked' problems (Allen and Gould 1986: 22) - problems which, supported by the ominous clash of contradictory certainties (Schwarz and Thompson 1990: 145), have no right or wrong answers, only more or less useful solutions (Stankey et al. 1992: 8). Think for example about the discussions on forest decline - *das Waldsterben* - in the 1990s. A constructionist perspective seems therefore inevitable if we wish to identify the underlying explanatory patterns in the various relations between people and forests.

Different boundaries do not necessarily represent different moral qualities. It is therefore not so much the boundary in itself that is of scientific interest. Rather, the scientific challenge is to look at who is setting, accepting, maintaining, adapting boundaries in relation to forests, as well as for what reasons and with what consequences. Science on boundaries means in the third instance taking an actor-focused perspective. It is the "real" actor and not a simplifying conception of it that counts here. Instead of assuming an objective rationality or a single truth, the associated complexity can be reduced by looking at how institutions are guiding actors in setting, accepting, maintaining, and adapting boundaries. Such an actor-focused institutionalism (Scharpf 1997) can additionally benefit from comparative studies in different natural and societal contexts, as well as from a strong historical perspective.

This leads me to another aspect of science on boundaries in the field of forest policy and forest management, namely that of scientific disciplines.

Science across boundaries

Taking such a strong social science approach one could argue that many disciplines are already using such perspectives to focus on forests and forestry. And indeed, disciplines such as Anthropology, Sociology, Political Science, Economics, Business Management, Psychology, and Human Geography, are providing important contributions to the development of forest policy and forest management. From a research perspective "forestry" can therefore be interpreted as a discussion platform bringing together specialised views of the respective disciplines.

However, these specialised perspectives can only partially meet the peculiarities of forest management. Forest management is characterised by many special features, such as the long time horizons, the quasi-irreversibility of the production processes, or the double function of nature as both input in the production process and the production process itself. Whereas not all of these features are unique to forestry, together they form a special challenge, which makes an integrated scientific approach to the fields of forest policy and forest management necessary.

From this it seems logical, that the role of a forestry scientist cannot just be that of a neutral facilitator, trying to accommodate the insights of different scientific disciplines in the field of forestry. In sharp contrast to a facilitator, a forestry scientist must be a mediator who uses his specific and integrated knowledge of the peculiarities of forestry to select promising approaches and insights out of the different fundamental disciplines. He then adapts and combines them according to the special conditions in the field of forestry in order to provide new insights.

Such a synoptic, integrated approach generally bears the reproach of amateurism due to the seeming lack of depth of content. Taking into account the many affected scientific disciplines, this problem might be particularly relevant for forestry science. On the other hand it is only by adopting this synoptic approach that we have the chance to acquire insights into questions, which otherwise would be inaccessible or only of limited accessibility for scientific analysis. And it is in the places where, from the individual disciplines' perspectives, the things are lying at the boundary and almost blur, where the most fruitful discussions are to be expected. In other words: the integrative width is the depth of forestry science.

And even more about boundaries...

There is much more to be said about boundaries. As time is limited I would like to take up only one more aspect regarding boundaries that allows me some more private words. It is about boundaries of cognition. As the sociologist Luhmann expressed it, our cognition is limited to the extent that an observer alone can only observe that he cannot observe what he cannot observe (Luhmann 1990: 65). This sounds complicated but brings it to the point that in a way we can only recognise relative to what is already familiar to us. One of the few ways to overcome this boundary of cognition is through exchange with other observers.

I am very grateful to the Raad van Bestuur for their confidence in appointing me here in Wageningen. This provides me with the opportunity to meet many new and interesting observers, and I hope that I will be of the same benefit to others. The first months here in Wageningen have been very positive in that respect, however the time was much too short to really gain a comprehensive overview of the abundance of possibilities.

To all colleagues, students, and people in the practical fields of forest policy and forest management - I am very much looking forward to expanding the boundaries of our cognition together

with you by exchanging our observations. This is what I think a university is about and why I have chosen to become a professor.

To Professor Mohren, dear Frits - the way we have been co-operating in the last few months on operational and strategic issues of the forestry chair groups makes me already quite optimistic that my ideal of a university does not have to stay a mere vision. If we succeed now in co-operating also on scientific projects, parts of the vision will become reality.

To the members of the Forest Policy and Forest Management Group, as well as the other people at 'Hinkeloord': without your warm reception and your support it would have been quite difficult to cross national, cultural and linguistic boundaries and to get settled in Wageningen. I am confident that the challenges we are facing - the new teaching structure, the new structure within Wageningen UR, the new budget system and the new building, to name some of them - will provide us with exciting opportunities and I am looking forward to indeed getting the best out of them with our joint forces.

But I do not want to forget the observers that have guided me so far: it is a great honour for me that so many of the observers that have given their best in trying to help me overcome the limitations in my cognition have made long journeys - even across boundaries - to be here today.

To my former colleagues from the Institute of Forestry Economics, University of Freiburg: many things - structures as well as procedures - here in Wageningen are quite different from the university system I have been used to in Freiburg. Nevertheless the things I learned in our discussions, the ideas I got from you, the many good memories I have and the support you continue to provide me with are of the utmost help also in my new environment. Nevertheless I am realising that some things look quite different from the perspective of a responsible chair holder than from that of an assistant professor. Thank you very much for everything.

Last but not least to my wife, dear Doris: I started out as a very traditional technically oriented forestry student. The many challenging discussions with you about the importance of including people and their respective capacities in our pictures of the world have contributed in a significant way to my professional development. Thank you very much for your continuous patience and support as well as the unobtrusive reminders that there is a very worthwhile life outside the university boundaries.

Mijnheer de Rector Magnificus, dames en heren, ik heb gezegd.

References:

- Allen, G.M.; Gould, E.M. Jr. 1986: Complexity, Wickedness and Public Forests. In: *Journal of Forestry* 84 (4): 20-23
- Boon, T.; Böswald, K.; Egestad, P.; Hanewinkel, M.; Hogl, K.; Lückge, F.-J.; Pregernig, M.; Schanz, H.; Schraml, U.; Statz, J. (1999): Conceptualising National Forest Programmes from a Theoretical Point of View – Documentation of Workshop-Sessions. In: Glück, P.; Oesten, G.; Schanz, H.; Volz, K.-R. (Eds.) 1999: Formulation and Implementation of National Forest Programmes. Proceedings of the International Seminar held in Freiburg, Germany, 18-20 May 1998. European Forest Institute (EFI) – Proceedings No. 30, Vol. I. Joensuu: 253-288
- Costanza, R.; d'Arge, R.; de Groot, R.; Farber, S.; Grasso, M., Hannon, B.; Limburg, K.; Naeem, S.; O'Neill, R.V.; Parmele, J.; Raskin, R.G.; Sulton, P.; van den Belt, M. 1997: The Value of the world's ecosystem services and natural capital. In: *Nature*, 387/15 (1997): 253-26
- Glück, P. 1987: Das Wertsystem der Forstleute. In: *Centralblatt für das gesamte Forstwesen* 104 (1): 44-51
- Hannigan, J.A. 1995: *Environmental Sociology - A Social Constructionist Perspective*. London, New York
- Hartman, A.; Draaisma, H. 1997: Het gaat over grenzen. In: *Over grenzen. Planologische discussiebijdragen 1997, deel 1*. Stichting Planologische Diskussiedagen. Delft: 157-161
- Hellström, E.; Reunala, A. 1995: *Forestry Conflicts from the 1950's to 1983 - A review of a Comparative Study between USA, Germany, France, Sweden, Finland and Norway*. European Forest Institute, Research Report No. 3. Joensuu

- Lee, R. G. 1990: Institutional Stability: A Requisite for Sustainable Forestry. In: The Starker Lectures 1990: Sustainable Forestry: Perspectives for the Pacific Northwest College of Forestry, Oregon State University, Carvallis Oregon, 1990 17-31
- Ludewig, K. 1992: Systemische Therapie - Grundlagen klinischer Theorie und Praxis. Stuttgart
- Luhmann, N. 1990: The Cognitive Program of Constructivism and a Reality that Remains Unknown. In: Krohn, W.; Küppers, G.; Nowotny, H. (eds.): Selforganization. Portrait of a Scientific Revolution. Dordrecht, Boston, London: 64-85
- Lund, H.G. 1998: Definitions of Forest, Deforestation, Afforestation, and Reforestation.
<http://home.att.net/~gklund/DEFpaper.html>
- Richardson, C.W.; Lee, R.G.; Miller, M.L. 1996: Thinking about Ecology: Cognition of Pacific Northwest Forest Managers across Diverse Institutions. In: Human Organization, 55(3): 314-323
- Romm, J. 1993: Sustainable Forestry, an Adaptive Social Process. In: Aplet, G. H. Johnson, N.; Olson, J.T.; Sample, V.A. (eds.): Defining Sustainable Forestry. Washington, Covelo: 280-293
- Schanz, H. 1996a: Forstliche Nachhaltigkeit. Sozialwissenschaftliche Analyse der Begriffsinhalte und -funktionen. Schriften aus dem Institut für Forstökonomie der Universität Freiburg, Bd.4. Freiburg
- Schanz, H. 1996b: Über gesellschaftliche Glaubwürdigkeits- und Verständigungspotentiale der Forstwirtschaft. In: Centralblatt für das gesamte Forstwesen 113 (3/4): 175-185
- Scharpf, F.W. 1997: Games Real Actors Play: Actor-Centered Institutionalism in Policy Research. Boulder

- Schmithuesen, F. 1996: The meaning of forests in a perspective of social and political development. In: *L'uomo e la Foresta - Secc. XIII-XVIII. Serie II - Atti della "Ventisettesima Settimana di Studi"*. Istituto Internazionale die Storica Economica Francesco Datini, Prato Firenze: 79-97
- Schroeder, H.W. 1996: Ecology of the Heart: Understanding How People Experience Natural Environments. In: Ewert, A.W. (ed.) 1996: *Natural Resource Management - The Human Dimension*. Boulder, Oxford: 13-27
- Schwarz, M.; Thompson, M. 1990: *Divided We Stand - Redefining Politics, Technology and Social Choice*. Pennsylvania
- Stankey, G.H. 1996: Defining the Social Acceptability of Forest Management Practices and Conditions: Integrating Science and Social Choice. In: Brunson, Mark W.; Kruger, Linda E.; Tyler, Catherine B.; Schroeder, Susan A. (Eds.) 1996: *Defining social acceptability in ecosystem management: a workshop proceedings; 1992 June 23-25; Kelso, WA. Gen. Tech. Rep. PNW-GTR-369*. Portland: 99-111
- Weick, K.E. 1995: *Sensemaking in Organizations*. Thousand Oaks, London, New Delhi.