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# Chapter Six

## Evaluation of the institutional structure of sustainable forest management in the Netherlands

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### Abstract

The aim of this paper is to evaluate the existing Dutch institutional structure on sustainable forest management (SFM). The evaluation was performed using criteria and indicators that were based on the four-dimensional structure (discourse, rules, power, and actors) of the policy arrangement approach. The data collection and analysis was done with a case study approach. All indicators show that the governmental capacity of the SFM arrangement is high. Most actors understand SFM in a similar way while accepting that different actors may emphasize different aspects of it. Some focus more on the economic functions of SFM while others focus on the nature conservation function. The SFM regulations (or interaction rules) are well known and not coercive, and are accepted by the respondents, likely resulting in enduring behavior change. The government and the actors who support the governmental SFM vision are powerful. Furthermore, the relationships between actors are positive and trusting. Given this high governance capacity, it is likely that the policy will be able to effectively realize its goals of sustainably combining the ecological, social and economic functions in most forests.

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### 1. Introduction

The concept of sustainable forest management (SFM) arises from the notion of sustainable development that gained increasing recognition worldwide in the late 1980's (Wang 2004). SFM is generally defined as achieving a balance between the social, economic and ecological values associated with forest resources with consideration of those values for future generations. It is important to take into account that SFM means different things to different people, at different scales of management and at different time periods (Hickey 2008).

In addition to the focus on management, other issues are important and need to be considered: institutional issues (Cortner et al 1996, 1998); the process of consensus-building around the meaning of "sustainability;" and the process by which sustainability becomes institutionalized in rules,

actor relations and power structures (Jennings and Zandbergen 1995). Although some studies have investigated these topics for ecosystem-based management (e.g. Imperial 1999a, 1999b) and community-based natural resource management (e.g. Leach et al. 1999), in general, evaluations of the SFM institutional structure are rarely conducted. The aim of our research is to evaluate the existing Dutch institutional structure on SFM. The Dutch state, i.e. the Ministry of Agriculture's division of Nature and Food Quality (LNV), has clearly formulated its definition of SFM and wants to implement this vision of SFM in most forests with regulation and cooperation from other actors. Some forests, i.e. the forests with a nature conservation focus, are the subject of another policy aim. Again, it is important to take into account that actors' understanding of SFM can differ.

In this paper we first describe a framework for institutional evaluation. Next, we provide a brief description of the case study approach our strategy for data collection and analysis which is a. Finally, we apply our theoretical framework and discuss the institutionalization of the SFM discourse with regard to rules, actor relations and power structures.

## 2. Theoretical framework

The theoretical framework that we use is the policy arrangement approach (PAA) (Van Tatenhove et al. 2000, Arts et al. 2006). The central concept of the PAA is an analysis of “the temporary stabilizations of the substance and

organization of a particular policy domain” (Van Tatenhove et al. 2000, p. 54, emphasis added). The stabilizations are assumed to be only temporary because the arrangements are under pressure of constant change (Arts and Van Tatenhove 2004). The structure of a policy arrangement is analyzed along the following four dimensions: (1) the actors and their coalitions involved in the policy domain (organization), (2) the division of resources between these actors (organization), (3) the rules of the game (organization and substance) and (4) the current policy discourses (substance) (Van Tatenhove et al. 2000, Arts et al. 2006). These four dimensions of a policy arrangement are inextricably interwoven, implying that any change on one dimension induces change in other dimensions.

**Table 1: SFM criteria & indicators for institutional evaluation**

Concept	Aspects	Dimensions	Criteria	Indicator	Governance capacity requirement
<i>Policy arrangement</i>	<i>Substance</i>	Discourse	SFM perspectives	Similarity in perspectives	Similar perspectives or differences in perspective are accepted
			Multi-functionality		
	<i>Organization</i>	Rules	SFM regulation	The extent to which regulation supports SFM policy	Existence of SFM regulation and no negative effects from other land-based policies
			SFM rules-in-use	Acceptance of the rules	High level of acceptance
		Actors	Place of actor in social network	Number of mutually developed ties between one actor and the other actors	Actors who promote SFM have many positive relations with other actors
			Trust	The extent to which other actors trust a specific actor	Actors who promote SFM are trustworthy
		Power	Resources	The relative distribution of power resources between actors	Actors who promote SFM have many resources at their disposal and other discourse coalitions do not
			Reputation	The extent that other actors believe that a specific actor is powerful	Actors who promote SFM have a strong reputation and other discourse coalitions do not

The PAA has mainly been used as an analytical tool. Recently it has been introduced as a tool for evaluation to investigate the potential governance capacity of the arrangement (Arts and Goverde 2006), i.e. the extent to which new forms of governance are able to successfully mitigate or solve societal and administrative problems which are legitimately recognized by the stakeholders (Nelissen et al. 2000). A high governance capacity means that the institutional preconditions of the policy arrangement to contribute to an effective realization of the desired policy impact are fulfilled. In order to measure this capacity, Arts and Goverde (2006) borrowed the concept of “congruence” from Boonstra (2004). Capacity is high when there is sufficient coherence among respectively (1) the policy views of the different actors (strategic congruence) and (2) the dimensions of a policy arrangement (structural congruence). To evaluate strategic and structural congruence we follow the idea of Wiering and Arts (2006) to link a number of criteria, indicators and requirements to the different dimensions of the arrangement (Table 1).

The first dimension, discourse, is restricted to the actors’ perspectives of the research theme, in this case “sustainable forest management.” Discourse consists of two criteria: “SFM perspectives” and “multi-functionality.” The former investigates the actors’ perspectives of SFM in general, and the latter pertains to concrete SFM activities (see section 3). This division is important for rather abstract concepts like SFM because private forest owners might display a relatively favorable attitude towards abstract concepts such as ecosystem management or SFM, but frequently oppose the specific elements of an actual plan (Brunson et al. 1997). These indicators are used to evaluate the strategic congruence and thus the similarity in SFM discourse.

The second dimension, rules, consists of substantive and organizational aspects. The substantive aspect is the extent to which a change in forest management discourse is reflected in changes in regulation (Wiering and Arts 2006). To evaluate the criterion “SFM regulation,” it is necessary to investigate to what extent the forest regulation was changed after the introduction of the SFM policy goal and to what extent this SFM regulation conflicts with existing land based policies. The organizational aspect is described by rules-in-use, i.e. the rules that individuals refer to when asked to explain and justify their interactions with other participants in an action arena (Ostrom et al. 1994). The evaluation of the criterion “SFM rules-in-use” requires an investigation of the acceptance of these SFM rules by the various actors. The governance capacity requirements for rules are the existence of specific SFM regulation, no negative effects from other land-based policies and a high acceptance of the rules-in-use.

The third dimension, policy actors, is analyzed based on social capital. Social capital is regarded as the glue for adaptive capacity and collaboration (Pretty and Ward 2001) and for effective governance systems including ecosystem management (Pretty and Ward 2001, Folke et al. 2005). Social capital is built by investing in social relationships (Scheffer et al. 2003) and is evaluated by the criteria “place of an actor in the social network” and “trust.” The first criterion, “place of an actor,” refers to the number of mutual ties between one actor and other actors in a social structure (Wasserman and Faust 1994). The second criterion, “trust,” refers to a more or less stable perception of actors about the intentions of other actors, i.e. that they refrain from opportunistic behavior (Edelenbos and Klijn 2007). The governance capacity requirements for actors are that actors who promote SFM are trustworthy and have many positive relations with other actors.

Finally, power is a multidimensional concept with relational, dispositional and structural aspects (Arts and van Tatenhove 2004). In our research, the focus is on dispositional power. The two other power concepts are less important for our research: the focus of relational power is on the micro-level in the sense that relational power means the extent to which a specific actor achieves outcomes in relation to other actors in a specific situation; likewise structural power focuses on the macro-level. The core idea of dispositional power is that policy agents are positioned vis-à-vis each other in arrangements on the basis of rules of the game as well as on the basis of an asymmetrical division of resources (Arts and Van Tatenhove 2004). To determine an actor’s power position it is important to take into account that only the relative difference in power resources is important (Goverde and Hinszen 1994). When all actors have the same quantity of power resources at their disposal, none of the actors has a competitive advantage over the others. By mapping the actors’ resources it becomes clear that certain actors need each other to realize their respective goals (Lieverink 2006). However the criterion “relative power position” gives only an indication of an actor’s potential power. The second criterion, “power reputation,” provides a better indication of actual use; it can be thought of as analogous to fire and smoke, i.e. smoke is an indicator of fire. According to this perspective, an actor is powerful if “smoke from power” or reputation of power is perceived by other actors (Lieshout and Westerheijden 1994). The governance capacity for power requires that actors who promote SFM have many resources at their disposal and have a strong reputation of power; other discourse coalitions do not.

### 3. Material & Methods

The research sub-questions (e.g. “how to define the different actors in SFM”) were best answered with a case study approach. Case studies are preferable when “how” and “why” questions are being asked about a contemporary set of events over which the investigator has little or no control (Yin 2003). The case study in this research project was conducted in a stepwise approach. The first step, familiarization, involved an investigation of all documents (n=29) which were related to this

case and the research subject. The second step was the collection of the field data through in-depth interviews. In all interviews questions on SFM discourse (in general, wood production, recreation, reducing the use of exotic trees and increasing the amount of dead wood), acceptance of rules, possible conflicts with other land-based policies, actor relations, trust in other actors, power resources (forest area, money and personnel, knowledge, communication possibility, formal and informal authority) and power reputation were asked. The interviews were held with ten private forest owners,

**Table 2: Discourse coalitions: name, members and differences from the SFM perspective of the government**

Coalitions	Members	Difference from the perspective of the government
SFM coalition	<ul style="list-style-type: none"> <li>two municipalities</li> <li>three forest consultancies</li> <li>Forest group “Zuid-Nederland”</li> <li>State Forest Service</li> <li>landscape organization “Brabants Landschap”</li> <li>Forest Groups Union</li> <li>Forest Board</li> </ul>	No difference
Economic coalition	<ul style="list-style-type: none"> <li>five private forest owners (&gt;60 ha)</li> <li>Federation private landownership</li> <li>one estate agent</li> </ul>	Multi-functionality: Wood production is the main function; the other two functions are possible when they have no negative effects on this main function. Exotics: Douglas and larch are important. Dead wood: No girdling.
Water harvest/ military use coalition	<ul style="list-style-type: none"> <li>two water harvest companies</li> <li>Ministry of Defense</li> <li>one private forest owner &gt;60 ha</li> </ul>	Multi-functionality: Water harvest/ military use is the main function; the other three functions are possible when they have no negative effects on this main function.
Nature coalition	<ul style="list-style-type: none"> <li>Natuurmonumenten</li> </ul>	Multi-functionality: Nature conservation is the main function; recreation is possible when there is no negative effect on the main function. Wood production: No target.
Local use coalition	<ul style="list-style-type: none"> <li>four private forest owners (&lt;30 ha)</li> </ul>	Social function: Forest is garden. Economic function: Wood for own use. Exotics: Only invasive exotics must be suppressed. Dead wood: No girdling.
Timber coalition	<ul style="list-style-type: none"> <li>three timber merchants</li> </ul>	Exotics: More important than indigenous. Dead wood: No girdling and can be dangerous. Wood operations: Prefer former clear-cut system.



**Table 3: Respondents' familiarity and acceptance of policy instruments**

Instrument	Aim	Familiarity	Acceptance
Forest Act	Maintain forest area	High	High, even praised
Flora and Fauna Act (including behavior code)	Protect plants and animals	High	Very low by timber merchants Low by many private owners Accepted by most organizations
Grant scheme Nature Management 2000	Provide financial support for nature and forest management	High	Idea is accepted, but control system is too rigid and the financial difference between the plus and the basic package is too low
Estate Act	Tax advantages	High	High
Economic part of provincial scheme	Provide financial support to develop SFM plan	High	High
Communicative part of provincial scheme	Promote SFM and capacity-building	High	High
Communication project on SFM by the state	Promote SFM and capacity-building	Low	The idea is accepted, but this specific project was not well executed

four public owners (two municipalities, Ministry of Defense, State Forest Service), two nature NGO's ("Natuurmonumenten" and "Brabants Landschap"), two water collection companies, three forest consultants, one estate agent, three wood merchants, the Ministry of Agriculture, Nature and Food Quality (LNV), the Forest Board (a lobby organization which unifies all forest and nature stakeholders), the Federation Private Landownership (FPG), the Forest Group Union and the Forest Group "Zuid-Nederland" (a cooperative organization of forest owners). In addition, it was important to interview the province of Noord-Brabant, but the province refused to cooperate.

## 4. Results

We first provide the results for strategic congruence, i.e. similarity between SFM perspective of the government and the different actors (discourse). Next we present the results for structural congruence, i.e. sufficient coherence among the dimensions of the SFM policy arrangement (discourse, rules, actors, power). Each section concludes with an evaluation of governance capacity.

### 4.1. Evaluation of strategic congruence

#### 4.1.1. Discourse coalitions

With regard to SFM, the Dutch state (LNV) emphasizes an integration of social, ecological and economic forest functions at the forest stand level. LNV wants to convince forest owners to use indigenous tree species, to increase dead wood in their forests naturally or even with silviculture techniques such as stem girdling, to increase the public accessibility of their forests and to improve recreational quality. The economic function of the forest is important for several reasons: the LNV encourages domestic wood production over imports, the economic function serves as an SFM steering mechanism, and the forest is an important source of income for many private forest owners. However, as mentioned before, this multi-functionality is not a goal for all forests; there are also forests managed for nature conservation. This LNV SFM vision can only be realized in those instances where other actors agree with the state's vision. By analyzing similarities and differences between actors' SFM perceptions, we distinguished six discourse coalitions. Table 2 describes the different discourse coalitions.

#### 4.1.2. Evaluation

To have a high level of strategic congruence, differences in perspective between the government and other actors must be small. The SFM coalition has the same SFM perspective as the government and thus congruence is high. The same goes for the economic and the water collection/military use coalitions; both coalitions agree with the governmental perspective on SFM when the benefits cover the costs or when SFM does not

endanger the primary respective functions of water harvest or military use. The congruence is lower for the wood coalition, the local use coalition and the nature coalition. Nevertheless this dissimilarity is not problematic; most other coalitions can accept the different perspectives of these groups. The nature coalition, i.e. “Natuurmonumenten,” fulfills the policy aim of forests with a nature conservation function. The wood coalition emphasizes the policy aim of the Dutch need for domestic wood production and the importance of exotics to fulfill this role. The difference with the local use coalition is partly a knowledge problem; already the coalition reacts favorably to fulfill the ecological forest policy objectives. Only the differences of perspective between the wood coalition and the nature coalition are significant and not completely resolved. The wood coalition deplores that “Natuurmonumenten” does not have a focus on productivity. Nonetheless, in general most differences in perspectives are small or accepted, resulting in a high strategic congruence for this case.

## 4.2. Evaluation of structural congruence

### 4.2.1. Rules

Governance capacity is high when the SFM discourse is institutionalized in clear, well known and accepted rules and when there are no conflicts with other land-based policy, which seems to be the case here. First, the Dutch state and the province of Noord-Brabant designed regulations with SFM as a main goal. Second, the respondents mentioned that there were no negative effects of other land-based policies on the SFM policy. Third, this requirement is to a large extent fulfilled for most policy instruments, as was discovered when familiarity and acceptance of the different SFM relevant policy instruments were surveyed (see Table 3). Nevertheless, the high acceptance can further be improved by an adaptation of the current grant scheme Nature Management 2000 to a scheme that has more self-regulation, is less rigid and has a greater difference in financial compensation between the basic and the plus package.

### 4.2.2. Actors and Power

The governance capacity requirements for the indicators “place of actor in social network,” “trust,” “power resources” and “power reputation” were evaluated on the level of the discourse coalition (see Table 4). All indicators have the same governance capacity requirement: the indicator value must be high for the discourse coalitions that have the same or only slightly different SFM perspective than

**Table 4: Evaluation of the governance capacity requirements for the indicators “place of actor in social network”, “trust”, “power resources” and “power reputation”**

Coalitions	Network place (actors which have positive rewarded relations with at least 50% of the respondents)	Trust (70% of respondents show a high trust in this actor)	Power resources (%)	Power reputation (70% of respondents believe that actor is powerful)
SFM coalition and LNV	Forest group, Brabants Landschap, State Forest Service	Forest group, Brabants Landschap	61	LNV, Forest Board, State Forest Service
Economic coalition	-	-	14	-
Water harvest/ military use coalition	-	-	8	-
Nature coalition	Natuurmonumenten	Natuurmonumenten	9	Natuurmonumenten
Local use coalition	-	-	0	-
Timber coalition	-	-	1	-
Province of Noord-Brabant (coalition not known)	-	-	8	Province of Noord-Brabant

the government (e.g. SFM discourse coalition, the economic discourse coalition) and low for the discourse coalitions that have a different SFM perspective (e.g. wood coalition). It is possible to conclude that these requirements are fulfilled. The SFM coalition and the government (LNV) control 61% of the power resources. This increases to 83% when the economic and water harvest/military use coalitions are taken into account. Most actors believe that the Forest Board, the State Forest Service and the government itself are powerful. In addition, the forest group “Zuid-Nederland,” “Brabants Landschap” and the State Forest Service play an important role in the social network. Most actors also trust the forest group and “Brabants Landschap.” In addition to the SFM coalition members, “Natuurmonumenten” and the province of Noord-Brabant are important actors. “Natuurmonumenten” scores high for network place and trust, and it controls 9% of the power resources. As mentioned before, this is not a problem because almost all actors know and accept that this organization realizes another governmental aim: managing forests for nature conservation focus. Finally, because the provincial official of Noord-Brabant refused to cooperate, it is unknown in which coalition the province will be. This can be important because the province of Noord-Brabant controls 8% of the power means and has a strong reputation.

#### 4.2.3. Evaluation

The structural congruence—coherence among the dimensions of the policy arrangement—of the investigated case is high. The SFM discourses are institutionalized in clear, well-known and accepted rules. All actors of the SFM coalition, together with the LNV, control almost two thirds of the power resources. Two of the members of the SFM coalition (State Forest Service and the Forest Board) and the Dutch state enjoy also a high reputation in the local network. In addition, some of the SFM members are trusted and esteemed actors. There are also no negative effects of non-SFM coalition members.

## 5. Conclusions

All indicators show that the governmental capacity of the SFM arrangement is high. Most actors understand SFM in a similar way and accept that different actors emphasize different aspects of SFM. Some focus more on the economic function; other actors focus on the nature function. The relevant SFM regulation is well known, not coercive and accepted by the respondents. The government and the actors who support the government’s SFM vision are powerful. Furthermore, several of the SFM members are trusted and esteemed actors. Given this high governance capacity, there is a high

probability that the policy objective of combining ecological, social and economic functions in a sustainable way can be successfully implemented in most forests.

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