8 Science in Support of the Forest Biodiversity Programme for Southern Finland

Working from the inside

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8.1 Introduction

The scientific community has an important role in producing information for decision-making processes. Moreover, the effective and proper utilisation of scientific knowledge in support of policy-making is a profound goal of the scientific community.

In order to bring valuable information to the policy table, and help focus subsequent research studies on policy-relevant topics, Mills and Solberg (1998) emphasise the need to build a collaborative infrastructure and relations between science and policy-making. This can be accomplished, for example, through proactively conducting research on anticipated policy issues, regular conferences, joint research studies, adaptive management, and boundary spanners. All these approaches help to strengthen the scientific community's input to policy-making, while operating from "outside" the policy process itself.

However, as the complexity of issues increases, and as the evaluation or assessment of policy implications (e.g. strategic environmental assessment, SEA) is becoming an increasingly integral part of policy processes, the question has been raised, to what extent the scientific community may or should be involved "inside" the policy process.

This paper illustrates a forest policy process, where scientists and the scientific community have been involved in policy-making in a non-traditional way, by supporting the process not only from the "outside" but also from the "inside".

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First, traditions of forest protection in Finland are described (Chapter 8.2). Finland has protected great parts of its northern forests. These areas are mostly publicly owned and scarcely populated. In recent years, nature protection in the more productive and predominately privately owned, Southern forests have been a heated issue of debate in Finnish forest policy. In particular, new instruments, which go beyond the traditional "strictly protected areas", have been called upon.

In Chapter 8.3, the process of compiling the Forest Biodiversity Programme for Southern Finland is described. The programme places particular emphasis on developing new, innovative means for nature conservation in private forests. In this paper, particular focus is placed on describing the conflicts and challenges related to the work and on the different ways in which scientists supported the process from the "inside". Finally, Chapter 8.4 reviews the lessons learned when involving scientists in policy processes not only from the "outside" but also from the "inside".

8.2 Traditions of Forest Protection in Finland

Conservation of untouched forests or forests, which have sustained the essential features of their original natural value despite slight human impact, was in the main focus of forest protection policy in Finland during recent decades. Establishing protected areas, where forest management and logging were no longer allowed, was the most natural way of securing the natural values of these forests, called "wilderness areas", "old growth forests", or "ancient forests" in the public debate.

The traditional way of maintaining natural values was to establish nature conservation areas and strict nature reserves. In Finland, this has been done since the 1930s. Later on, various national programmes were initiated to protect the main types of ecosystems. In addition to national parks and strict nature reserves, the Finnish government has approved national conservation programmes of e.g. mire conservation areas, herb-rich forest areas, old-growth natural forest areas, shoreline protection areas and wilderness areas.

In Finland, forest protection policies typically divided forests dualistically into either strictly protected areas excluding all forest management activities, or commercial forests managed according to overall environmental guidelines. Few forms of forest protection existed in addition to these two basic types. The dualistic approach to forest protection policy is also reflected in the everyday language. "Forest protection" is generally understood as the strict protection of a specific

forest area drawn on the map and marked on the field, from all forest management and logging activities.

Owing to this setting, forest protection policy in Finland has traditionally emphasised regulatory control, particularly judicial control through legislation concerning threatened species and protected areas. In the 1990s, judicial control expanded to arise not only from environmental legislation but also from forestry legislation, and national control was supplemented by international control by the EU.

The 1990s also marked an era of expansion of non-regulatory means of control over the environmental values of forests (e.g. public ownership and planning, economic incentives, information and negotiation). For example, the Finnish Forest and Park Service was transformed from a state agency into a state enterprise, and new weight in the legislation controlling was given to preservation biological values. On state lands, ecological landscape planning and participatory planning were adopted, and the state forest enterprise has actively continued the voluntary establishment of forest areas designed for recreation or preservation purposes.

In private forestry, normative forest management guidelines were transformed into voluntary-based recommendations and forest certification. Furthermore environmental management systems were introduced and a series of environmental guidelines and biodiversity programs by various actors (e.g. forest owner and forest industry organisations and the State Forest Enterprise) were published. Moreover, economic incentives for the protection of natural values of forest were made available for nature management activities and environmental projects that fulfil the requirements set by the Act on Financing Sustainable Forest Management (1997).

These recent developments in the use of other policy means than regulatory ones did not remarkably reduce the tensions related to the traditional dualistic setting of forest protection policy. In the minds of many Finns, the majority of forests were still either “strictly protected” or “commercial forests” managed according to overall environmental guidelines. For example, although the Finnish government proposed to the EU Commission the inclusion of approximately 12 per cent of Finland’s surface area into the Natura 2000 Network in 1998, the dualistic protection policy was not seriously challenged. The areas proposed mainly consisted of sites already included in existing conservation programmes.

This dualistic forest protection policy was a very fruitful setting for the emergence of a number of intense conflicts related to the protection of the last “old growth forests” or the “wilderness areas” of Finland in the 1980s and 1990s. Mostly, these conflicts focused on remote state-owned forests in Northern and Eastern Finland. Although the conflicts led to important

policy reforms, the culture of environmental forest conflicts in Finland in 1984-95 can be characterised as including a tendency for strong value clash, intense struggles, and poor relations between different actors (Hellström 2001). However, it can also be argued that many of the conflicts were rooted in the intensification of forest management, and a subsequent belief that establishing strictly protected areas was the most effective way to combat the threats caused to biodiversity by forestry practices.

The dualistic setting of forest protection also led into a situation, where the percentage of strictly protected areas became a central indicator of the level of forest protection. Measured in such quantitative terms, the share of strictly protected forests of the total forest area is higher in Finland (6,6 %) than in any other European country. Most European countries (e.g. France, Germany, UK, Austria, Switzerland, Belgium, Netherlands, Italy, Spain) have less than one percent of their forests strictly protected (Parviainen et al. 2000).

Typically, protected forests are usually concentrated in the most remote areas. In Finland, for example, only about one per cent of the forests in Southern Finland are strictly protected. This imbalance between forest protection levels in Northern and Southern Finland set the frame, within which the Forest Biodiversity Programme for Southern Finland was prepared in the beginning of the new Millennium.

8.3 Scientific involvement in compiling the Forest Biodiversity Programme for Southern Finland

8.3.1 From “outside” involvement to “inside” involvement

In Finland, debate on regional differences in the level of forest protection has long roots. However, a political break-through in the issue took place when the National Forest Programme 2010 (Ministry of Agriculture and Forestry 1999) recognised the imbalance between the level of forest protection in Northern and Southern Finland, and stated the need to assign a broad-based group of specialists to identify the potential needs for increased forest protection in Southern Finland. Developing forest protection in Southern Finland was taken into the programme of work of the Finnish government in 1999, as recommended by the National Forest Programme.

The National Forest Programme was above all a political programme, which did not fully utilise available scientific information. Several aspects of the scientific basis were strongly criticised in various environmental assessments of the programme (e.g. Hildén et al. 1999). This raised pressure for increasing the involvement of scientists in future processes. Later, the need to develop participation of the scientific community in national forest policy was also noted in the evaluation of the National Forest Programme (Kivinen and Paldanius 2002).

To begin with, the Ministry of Environment set up a working group comprising mainly of specialists in ecology and protection biology, to evaluate the status and needs of forest protection in Southern Finland. In September 2000, the working group reported the need for better protection of herb-rich forests, mineral-soil sites with abundant decayed wood, and spruce mires in Southern Finland. Moreover, commercial forests should contain more decaying and burnt wood, large aspens and other hardwood species (Ministry of Environment 2000). The recommendations were made on ecological scientific grounds only, not taking into consideration their potential social or economic impacts.

The idea behind the scientifically oriented working group was that compiling ecological information would facilitate further decision-making in a subsequent multi-stakeholder process. However, this did not prove to be the case. Although the contents or conclusions of the working group were only questioned to a minor degree, there was reluctance among many stakeholders to utilise the findings of the working group, because they were not involved in the process and in drawing up the conclusions.

This process would have been a typical example of instrumental utilisation of science (see Box 8.1) if it had led to a decision on the future of protection of forests in Southern Finland. Information needs on forest protection in Southern Finland were identified, scientific information was gathered, and to a minor extent also produced. Then, they were interpreted in the framework of the decision-making situation., Because the information was interpreted only in an ecological framework, however, the working group was never given the mandate to finalise the instrumental use of science by deciding on the choice of solution. Instead, this issue was left to an explicitly politically dominated policy process, which was to follow.

Box 8.1 Types of utilising scientific knowledge as identified by Lampinen (1985).

Instrumental utilisation has direct influence in decision-making. It is best described as problem solving. This process may be described through the following chain: analysis of decision-making situation – identification of information needs – production or gathering of scientific information – interpretation of the research results within the framework of the decision-making situation – choice of solution. In short, the decision-maker uses scientific evidence consciously in order to fill in gaps of knowledge that are strategic to his decision-making. At large, the instrumental utilisation of science in decision-making is open to many types of criticism.

In *conceptual* utilisation of science, research does not provide direct answers to predefined questions but has a more indirect influence on decision-making. Research helps to conceptualise the problem in question. Most often, research has more impact on problem formulation than problem resolution. In this approach, science has no monopoly on "correct" information. Decision-making is also based on previous experiences, and other non-scientific communication.

Political utilisation is another form of indirect influence of science to decision-making. Instead of using research to search for the best possible solution, science is used to support a specific policy. Often, in political utilisation, research results are harnessed to serve purposes for which they were not produced. However, researchers may also themselves offer decision-makers such results that they are themselves comfortable with. Their motivation may be increased research funding or to influence decision-making.

In December 2000 the Finnish Council of State appointed a commission to work out a proposal for a Forest Biodiversity Programme for Southern Finland (later referred to as the METSO Commission and the METSO Programme). The Commission was established to present the goals and a schedule of work for improving the protection status of forests in Southern Finland, and appoint necessary means and funding for the work. The commission also had to examine the readiness and possibilities of different actors in the forestry sector for promoting forest protection in Southern Finland. Finally, the impacts of the proposed actions on private economies and national economy, on employment and other social aspects were to be identified.

The METSO Commission had 25 members representing a broad variety of economic, social and environmental interests related to forests. Although this new process was based on interest group representation, also scientists were assigned several roles "inside" the process:

– Five permanent experts to the commission were appointed to support the Commission's work. These experts represented knowledge in policy processes and conflict management, resource management and

environmental impact assessment, ecology, environmental economics, and forestry development. The experts had no right to vote in the Commission but this was of little consequence since the Commission aimed at consensus and did not vote on a single issue. Although the status of the experts was not made clear, it was expected that they act neutrally in relation to the different interest groups, and base their work on expertise only.

- Some of the experts were assigned to chair interim working groups of the Commission (e.g. Working Group for Policy Means, and Working Group for Assessment Criteria).
- The design of the process was constantly developed and evaluated by a small working committee, consisting of the chair, co-chair, secretaries, working group leaders and the experts to the Commission.

Although officially assigned as experts to the Commission, the experts were not the only scientists to participate in the process. For example, the Finnish Association for Nature Conservation appointed one of the best-known ecological scientists in Finland as their representative. That is, not all scientists operated from a neutral position in relation to the interests involved. Moreover, several of the people that were involved (e.g. the Secretary General and the vice-chairman of the Commission) had a scientific education and career prior to their present positions in administration.

The task of the Commission was challenging already because of its wide scope and large number of participants. However, perhaps even more challenges were related to the novel nature of the work, differences related to information production and use, trust, commitment, funding and innovativeness. In the following sections, these challenges are elaborated, and the roles of the scientists in meeting them are described.

8.3.2 Setting the stage for information-sharing and trust-building

Work in the METSO Commission began in a situation, where deep distrust existed between parts of the stakeholders involved. Resolving the forest protection issue in Southern Finland was made difficult by the burdens of old conflicts over forest protection, and the distrust between actors it had generated. Despite this distrust, all the stakeholders involved in the process appeared to be rather well committed to the basic idea of securing biological values in the forests of Southern Finland, according to the recommendations made in the National Forest Programme. However, there was no overall commitment to increase the use of any specific type of

forest protection measure, nor the need to introduce a new protection means. In the beginning, the participants even had rather different views on the overall necessity of the work to be conducted. They also had different perceptions of the level of each other's commitment to the work.

Although a large amount of information was compiled by the groups of specialists assigned to evaluate the status and needs of forest protection in Southern Finland (Ministry of Environment 2000), the METSO Commission still faced the problems of availability and credibility of information, which did not ease the problems related to lack of trust and commitment. For example, in the 1990s, major changes took place in forest management, with some positive impact on the forest environment. However, the final impacts of changes in forest management practices are not easy to evaluate only within a decade, when the rotation period of the forest is ten times longer. Insufficient information also existed on the ecological values that were already protected in the existing national parks and nature reserves. Moreover, information on the economic impacts of forest protection was limited, and the contents of social sustainability were still being defined. There was also considerable concern about political utilisation of science (see Box 8.1), e.g. using science to support particular policies.

Different stakeholders reacted on the lack of information and fears of political utilisation of science in different ways. For some, it was a motivation to act rapidly ("avoidance of potential ecological threats"). For others, the level of information was too low to trigger any action ("waiting until there is sufficient evidence"). Such debate also increased tension among the members of the Commission.

Owing to the substantial lack of trust, the METSO Commission was not willing to divide into any smaller working groups, although it was obvious from the beginning that the meetings, which were usually participated by 30 people, could not work very effectively. Everyone wanted to be present in every meeting, and be able to safeguard his or her interests at every time. In the beginning, there was also an evident need to build at least some common knowledge base.

Subsequently, during the first months, the Commission's work focused only on hearing external experts, sharing information and discussion (box 1 in Figure 8.1). Although the establishment of a common knowledge base did not succeed in all necessary aspects, giving enough time for discussion helped in clarifying some of the concepts used, and in learning to communicate with each other. This builds enough seeds of trust and commitment, in order to be able to continue with other working methods.

Although hearing external specialists brought valuable information to the table, it did not resolve all the problems related to information.

Subsequently, in May 2000, the Commission appointed itself an interim-working group (the Working Group for Research, box 2 in Figure 8.1), for identifying research needs for the future. The working group also evaluated what information could be produced within the time span of the Commission's work. The working group was participated by representatives of all major interest groups (forest owners, forest industry, state forestry, forestry professionals and nature conservation). This is an indication of how politicised the issue of information was within the work of the Commission. In addition, all the permanent experts to the Commission had the possibility to participate in the work. This working group was active until the final stages of the Commission's work.

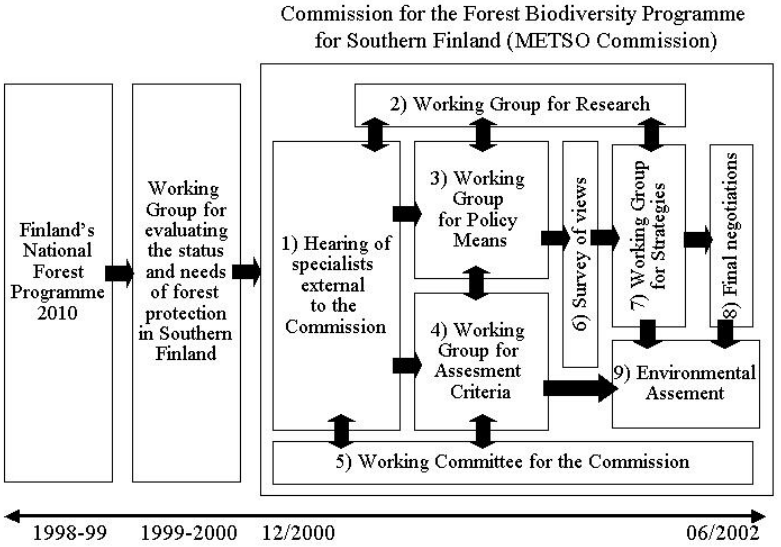

Fig. 8.1 The process of compiling the Forest Biodiversity Programme for Southern Finland (METSO Programme).

8.3.3 Conceptual work and process support

The amount of information gathered by the METSO Commission during the first six months was enormous, but it still did not fulfil all information needs. This led into some frustration on the progress of the Commission. Accordingly, the members of the Commission were finally ready to search for solutions by working in smaller dynamic groups that could work in more creative ways.

Innovative solutions were called upon for various reasons. Perhaps the most important practical barrier to the work was lack of funding. The programme was drafted in a situation, where the previous government of Finland had already decided upon using nearly € 600 million for implementation of old protection programmes during 1996-2007, with an additional € 250 million to be used in protecting state owned land. Because of this already ongoing significant input in nature protection, the government stated in appointing the METSO Commission, that no additional funding from the state budget could be assigned for forest protection in Southern Finland until after the year 2007.

Such tight financial frames required high innovativeness in designing new, cost-effective means of forest protection, and new models for funding such protection. Accordingly, in the assignment letter by the government, the Commission was urged to search for cost-effective, innovative solutions. Moreover, the Commission itself was commited to develop ecologically efficient and voluntary approaches. Innovativeness was a challenge also because innovations require good and confidential communication between different stakeholders, and overall motivation for the work. Accordingly, it was important to create an atmosphere of trust, where new ideas could be presented and even supported over stakeholder borders, and where also the members of the Commission felt motivated by the work to be conducted. The first step in creating motivation and trust was clarifying what was to be done.

The assignment and work of the Commission differed in many respects from all previous forest protection commissions in Finland. The most important differences were related to how the words “protection” and “protection programme” were understood. In the work of the Commission, “protection” no longer meant the strict conservation of areas drawn on maps and marked in the forest. Instead, it meant securing biological values of forest by using a variety of means both in conservation areas and in managed forests. Accordingly, the “protection programme” that the committee was drafting, was not a traditional map of areas to be protected, but rather a comprehensive framework policy for a variety of protection measures for the future.

This shift of focus brought about the need for conceptual work, which was strengthened when the Commission was finally ready to appoint additional working groups in June 2001. The Working Group for Protection Means (box 3 in Figure 8.1) was given the task to evaluate present means of forest protection, discuss their further development, and suggest potential new means of forest protection in Southern Finland. To begin with, the Working Group listed all means that were used to preserve forest biodiversity today. This was essential in order to increase

understanding that the Commission was to deal with the whole spectrum of policy means and not only with traditional designation of lands for protection purposes. For classification of the policy means, a framework of both policy means and protection strategies was utilised. The idea was to illustrate how a certain protection strategy could be implemented through the use of several alternative policy means, and how one type of policy means could be used to fulfil several types of protection strategies. Finally, a SWOT analysis was conducted on the various policy means and protection strategies. This systematic, conceptual approach ensured that the search for solutions also focused on such new possibilities of forest protection, which were not in use in Finland yet. Accordingly, it broadened the scope of solutions to be considered by the Commission as a whole.

Simultaneously with the Working Group for Policy Means, also a Working Group for Environmental Assessment (box 4 in Figure 8.1) was assigned. Its task was to suggest methods and criteria for evaluation of the ecological, economic, and social impacts of the programme. The fact that the assessment criteria were designed simultaneously but within a different group that designed the new protection means, increased potential for creativeness. Those responsible for designing new policy means did not have to care for the consequences, but could rely on the fact that each suggestion would eventually be evaluated by using jointly agreed criteria. In the work of the Working Group for Impact Assessment, the overall concept of sustainable development had to be conceptually opened and defined in such a practical way that it could guide decision-making on the final programme.

Both working groups conducted a significant amount of conceptual work. Scientists who had been appointed as permanent experts to the METSO Commission chaired both working groups. Accordingly, these two processes formed a phase of predominately conceptual utilisation of science. As described in the Box 8.1, conceptual utilisation of science does not provide direct answers to predefined questions. Instead, research helps to conceptualise the problems in question.

These two working groups worked in close interaction during their whole existence. Moreover, the progress of work was regularly discussed and further developed in the meetings of the working committee of the Commission, participated by the chair, co-chair, secretariat, working group leaders, and other permanent experts to the Commission (box 5 in Figure 8.1). Accordingly, the work conducted at the working committee formed an important further channel for the participation of scientists in the policy process. However, this input was essentially neither instrumental nor conceptual. Instead of producing or disseminating, or sharing information

related to the substance of the work, the scientists offered procedural support to the process.

8.3.4 Strategies and outcomes

Although the work of the Working Groups for Policy Means and Impact Assessment were completed in January 2002, procedural support from scientists continued. The list of potential means for future forest protection in Southern Finland was used as a basis for a survey among the members of the METSO Commission, in order to find out if there were any means that the members of the Commission could agree upon (box 6 in Figure 8.1). The survey was conducted anonymously so that the members of the Commission did not know which interest groups supported which means. On the basis of the survey, the suggested means were divided into two groups: those where some common interest existed, and those where significant disagreement existed.

In the following strategy work, the Commission decided to first find out, what could be done in relation to the means where most agreement existed, and only then consider whether there is need to supplement the selection of means with some more disputed ones. This helped focus the strategy work more on common than contrasting interests.

Next, a Working Group for Strategies was appointed (box 7 in Figure 8.1). Although it was suggested by the working committee that the experts to the Commission continue to lead this process, the members of the Commission disagreed. At this time, the process had come to a point where the cards had been dealt, and it was time to play them. This called for a chairman who was in a position to be able to carry political responsibility for the decisions to be made. Accordingly, this task was assigned to the chairman of the Commission.

After the strategy work that set the frame for final solutions, the final decisions on what means to include in the final programme, and to what extent they should be used, were made in negotiations participated by all members of the Commission (box 8 in Figure 8.1). Despite an extremely challenging process, the Commission for the Protection of Forests in Southern Finland was able to hand over their proposal to the Council of State of Finland in July 2002, by the time of the deadline that was given to the committee. Only one dissenting opinion and three supplementary statements were annexed to the report of the Commission.

As part of the final report, economic, social and ecological impacts of the proposed programme were evaluated (box 9 in Figure 8.1). Although the evaluation used the ecological, social and economic criteria designed

by the Working Group for Assessment Criteria, the evaluation itself was not made in name of the Commission, but as an expert opinion of one of the experts to the Commission, which was annexed to the report. This was justified by the argument that, although the choice of assessment criteria was of political nature, the evaluation of impacts based on these criteria was predominantly a scientific effort. The practical reason was that the METSO Commission simply ran out of time. It would not have been possible to reach an agreement on the evaluations. Many of the disagreements concerning the validity of data that hampered the work in the early phases of the Commission's work would have been resurfaced.

Accordingly, the METSO Commission did not propose the immediate drafting of a traditional forest protection programme, in which strictly protected areas would be created by acquisition to the state. The strategy of the proposal is to first investigate the potentials related to the new voluntary means, and only then decide on the need of increased use of more traditional protection measures.

Five percent of the funding reserved for the pilot projects on new voluntary protection measures is to be allocated to research. Accordingly, at the same time as the piloting of the new voluntary protection means was started, vigorous and multi-disciplinary research has been launched to evaluate the economic, social and ecological impacts of the new means, in order to provide information for further decisions to be made on the protection of forests in Southern Finland. By 2006, an assessment of the impact of the measures taken will provide the basis for further decision-making. Accordingly, science also plays an important role in the implementation and evaluation of the programme.

Box 8.2 Forest protection measures of the Forest Biodiversity Programme for Southern Finland (METSO Programme)

The METSO Programme includes a variety of measures to improve forest protection in Southern Finland. Part of the means were based on previous protection means, whereas part of the means are new, thus, requiring pilot projects before use in full scale. In total, the programme includes 17 actions to be taken during 2003-07. All these actions were approved by the government of Finland, which has included the METSO programme in its new programme of work. Below, only the most important measures suggested are described.

During the first stage, the focus is on the *restoration* and *management* of the present nature conservation areas on public lands. Restoration aims at making areas, which have been changed by human activities, revert to as close to their natural state as possible. For this purpose, the Programme also calls for organised compilation of data from existing protected areas. The Programme also proposes that the Finnish State Forest Enterprise takes natural values into account more effectively in state-owned forests, and that areas valuable from a nature conservation perspective are inventoried and protected in special areas and in areas adjacent to nature conservation areas.

On private lands, the Programme launches four new protection instruments that operate on a voluntary basis. In *competitive bidding*, the authorities ask the landowners to offer areas to be designated as protection areas, after which the best offers are selected for implementation. The *trade with natural values* is a system where the landowner, under a special contract, maintains or adds to the natural values in his forests, and is compensated with an income from the buyer of natural values, such as the state or a foundation. In *biodiversity networks*, natural values in more extensive areas are safeguarded through local co-operation between forest owners and other local bodies. Finally, a *nature management area* could be established on the application of the landowner, so that besides commercial use there would be efficient protection of biodiversity. The landowner would be fully compensated for the economic loss ensuing from limitations in the use of these areas.

The Programme also proposes increased funds for the enhancement of biodiversity and a correction of the drawbacks of the present support system, and improved *information means*, e.g. education, extension, monitoring and research, in support of forest protection. For example, the final report of the committee includes a list of research needs and funding to start a new research programme on forest biodiversity.

Finally, the Programme includes increased *financing* external to the state budged (e.g. establishment of a foundation for financing forest protection) so as to make it possible to respond to the willingness of landowners to protect forests. Despite these sources of financing, the Programme also proposes a total of about € 60 million of state financing for the implementation of the action plan during 2003-2007.

The METSO-process was successful in the sense that it completed its task in time and on a rather high level of consensus. However, consensus was reached at the expense of not being able to define accurate, measurable goals for the level of forest protection (e.g. hectares, percentages, species, biotopes). Yet, the majority of the Commission also felt that the programme had made important contributions to the development of forestry practices in Finland in line with ideas of sustainable development. In particular, in the traditions of Finnish forest protection, this solution is a major step from a dualistic strategy based on regulatory means (see Chapter 8.2), towards a more pluralistic strategy using also voluntary means. The environmental groups that submitted the dissenting opinion and supplementary statements, however, saw that the process simply postponed necessary decisions and thus represented a “victory” for those opposing “proper” biodiversity protection through the establishment of more traditional protection areas. This tension is the background against which future decisions on the protection of forests in Southern Finland are to be made.

8.4 Lessons Learned

8.4.1 New perspectives on the utilisation of science

The traditional role of scientists in policy processes is instrumental or conceptual (see Box 8.1), taking place mostly “outside”, and in the best case in close interaction with the actual policy process.

In the beginning of the work of the METSO Commission, the environmental community expected and the forestry community feared that ecological science would be used instrumentally in decision-making. Strong expectations existed particularly among the environmental community that the process would continue in a linear way, basing final decisions primarily on ecological facts compiled by the working group that was set up prior to the METSO Commission to evaluate the status and needs of forest protection in Southern Finland.

However, instead of a linear process, where goals are first defined, and means are then selected for reaching the goals, an iterative process occurred. The final goals of the METSO Programme were actually defined after agreement on the use of different means was reached. In fact, for many interest groups represented in the Commission, agreeing upon the means of forest protection (e.g. how protection would be implemented and who would pay for it) was a more important decision than agreeing upon

the amount of forest protection. Such a setting challenged the basic ideology behind instrumental utilisation of science, and induced some feeling of betrayal among those, who had expected the whole process to be based on instrumental utilisation of science.

As described in Sections 8.3.1 and 8.3.3, the process involved expectations on instrumental utilisation of science, and eventual utilisation of conceptual utilisation of science. However, ultimately the appointed experts also played a very different role: that of developing procedures and of facilitating discussions within the process. Scientific knowledge and experiences of the experts were used to support the designing and selection of working methods of the process. Here, the task of scientists was to support the policy process in such a way, that the task of the METSO Commission would be accomplished and that agreement could be reached within the time frame set for the work. This kind of use of scientists and science does not fit into the categories of Lampinen (1985, see Box 8.1).

In the process of preparing the METSO Programme, this setting was not always understood. Reaching agreement and completing the task that was assigned was not in the interest of all parties involved. Accordingly, even process support from the scientists was sometimes understood as a political statement in favour of a specific policy action.

In many policy processes facilitators are used to guide the process through conflicting situations. In addition to facilitation skills, facilitators are usually expected to be neutral in relation to the issues to be resolved and to have sufficient expertise in the field of question. The demands for neutrality and expertise easily lead to temptations to turn to the scientific community. As pointed out in this section, this has advantages and disadvantages. A question that remains unanswered here is, in which ways scientist facilitators differ from pure process facilitators, and how these differences should be taken into consideration in policy processes.

Environmental impact assessment is another form of utilisation of science, which challenges the typology of utilisation of science presented in Box 8.1. The environmental assessment was in this case an integral part of the preparation of the programme. The criteria that were developed contributed to the development of means and the development of means to be included in the programme developed the criteria. This kind of reflexive use of science has features that can be said to reflect conceptual use, but may also provide instrumental basis for the choice between alternatives. It is also political in the sense that the discussions on criteria are colored by political considerations even when they are based on e.g. quantitative calculations of monetary costs of ecological benefits.

Another example of reflexive use of science in the METSO process, which goes beyond instrumental and conceptual utilisation of science, is

related to the innovative solutions that were called upon. Dialogue between scientific knowledge and practical experience is a major source of innovation, and as the METSO process illustrates, the innovative nature of policy processes may be greatly increased, if the scientific community is able to participate also from the "inside".

8.4.2 Challenges in working from the "inside"

The preparation of the METSO Programme is an example of a policy process, where scientists were involved not only from the "outside" but also from "inside". A common fear is that deep involvement in the actual policy process may easily lead to political utilisation of science (see Box 8.1), which is discussed in the following.

Efficient utilisation of science within the policy process requires understanding from those leading the process, and also courage from the scientists themselves. Any statement, even though made on scientific grounds, and expressed only in order to support the process as a whole, may be interpreted as political utilisation of science by those with an opposite interest to the proposal made. In fact, one factor which has been preventing the participation of scientists in policy processes is the scientists' own fears of being labelled to support specific interests, which may endanger their integrity as researchers. In such situations, it is important that the leader of the process may stand in support of the integrity of the scientists.

When involving scientists "inside" policy processes, it is also essential that the role of the scientists is clearly defined and also communicated to all parties involved. At best, the involvement of the scientific community is planned already simultaneously with the assignment of the task and nomination of the committee. This would give the scientists a firm background to stand upon, in such conflict situations where members of the policy process have problems in differentiating between political and other forms of utilisation of science.

Traditionally, it is advised that the role of scientists is to produce and transmit information to policy processes, and not to participate in value-based decision-making. A similar fear has also been expressed by many forest research administrators, emphasising that the importance of scientists in support of policy-making is based on credibility, which should not be compromised (Mills and Solberg 1998, Lewis and Koch 1999, Guldin et. al 2005).

Involving scientists in policy processes from the "inside" does not need to challenge this view by introducing political utilisation of science (see

Box 8.1). In fact, the close involvement of scientists in decision-making may even increase the legitimacy of the policy outcomes. In modern pluralistic societies, there is growing call for participation of various interests in policy processes. Why should the scientific community make an exception? Even if we accept that the scientific community as a whole should not take political stand in relation to policy outcomes, we could still acknowledge that the scientific community has a legitimate interest in policy processes.

Jaatinen (1999: 22) defines lobbying as influencing political decision-making in the interest of a group by communicating with publics relevant to the political process in a certain issue. Accordingly, central aspects of lobbying include communication, influence and interest. The science community is not exempt from these aspects. In fact, the science community is expected to disseminate and communicate information provided by scientific methods in an open manner. Inevitably, one important motivation for communication is to influence decision-making. Moreover, it is in the interest of the science community that decision-making is based on sound scientific information as a foundation for reasonable and accepted decisions. This overall goal of the scientific community in policy processes should be acknowledged and separated from the types of interests involved in political utilisation of science.

If the participation of scientists is seen as an asset for policy processes, the question remains who should be involved and how. Experiences from the preparation of the METSO Programme suggest, that scientists being able to disseminate both instrumental and conceptual knowledge are necessary. Scientists being able to give procedural advice may also be essential for the outcome, particularly when conflicting issues are involved.

At best, individual scientists working within the policy processes may act as “bridges” to the rest of the scientific community. However, constructing a firm bridge requires considerable activity from the scientists themselves. In an ideal case, the scientist involved in a policy process may identify information needs along the process, use his expertise and contacts to gather such information from the rest of the scientific community, and disseminate it back to the committee. In practice, however, scientists often tend to act as individuals, without a mandate from the whole scientific community. This means that no matter who are involved, there usually exist some disagreements within the scientific community on which information to use and how. However, internal disagreement does not only feature the scientific community. It is present in almost all interest parties involved in policy-making, and thus, it should not discourage the closer participation of scientists in policy processes.

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