

REGIONAL FOREST PROGRAMMES:

A PARTICIPATORY APPROACH TO SUPPORT FOREST BASED REGIONAL DEVELOPMENT

**Proceedings of the
Nordic Research Course on Regional Forest Strategies
held in Mekrijärvi, Finland 17-24 June 1999
and
the European Summer School on
Regional Forest Strategies in Different Forest Cultures of Europe
held in Marybank, Scotland 15-22 August 1999**

Edited by Anssi Niskanen and Johanna Väyrynen

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Regional Forest Programmes: A Participatory Approach to Support Forest Based Regional Development
Edited by Anssi Niskanen and Johanna Väyrynen

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FOREWORD

Regional forestry strategies are target programmes for forestry. Although not legally binding, they are important tools to implement forest policies at the regional level. In these comprehensive action plans for the forest sector, the production of wood and non-wood forest products, the expected environmental and regional economic impacts, research and education, as well as tourism and recreation are equally represented.

European Forest Institute arranged two research and post-graduate courses on regional forest strategies in 1999. The goals of the courses were to:

- provide an overview of theories important for understanding the opportunities of the forest sector in the context of regional development.
- demonstrate the necessity of working in multidisciplinary teams and to address the necessity to study forest based development issues from a multidisciplinary perspective.
- provide a broad basis for devising regional forest policies and strategies, and to illustrate the role of regional forestry strategies as policy tools by linking the applied theories and practice.

The programme of the courses were divided into four parts: theoretical part, which introduced the state of the art and the principles of participatory methods and rural/regional development theories, presentations of the participants own research papers, field trip and group work. The programme that included both the theoretical background information as well as practical work (field trip, strategy formulation and negotiations), and gave the participants a good overview of the process in the formulation of forest strategies.

Regional forest strategies in Nordic countries 17-23 June 1999, Mekrijärvi, Finland

Course on Regional forest strategies in Nordic countries was funded by NorFa (Nordic Academy for Advanced Study) and organised by the FORWARD project of the EFI. The course was attended by 16 participants from 9 different countries.

We would like to thank Ms. Mari Pitkänen (European Forest Institute) for great job with helping the practical arrangements. Also those who contributed in a valuable way the field trips, e.g. Mr. Ahti Ullgren (StoraEnso Ltd.), Mr. Kyösti Hassinen (North Karelian Forestry Centre), Mr. Kyösti Kuivalainen (Private forest owner, Vuonislampi Lieksa), Mr. Harri Hölttä (Finnish Association for Nature Conservation), Mr. Ari Mononen (IivariMononen Ltd.) and Mr. Kyösti Tuhkalainen (Finnish forest and park service) are warmly thanked.

Regional forest strategies in different forest cultures of Europe

15-22 August 1999, Marybank, Scotland UK

The course on Regional forest strategies in different forest cultures of Europe was funded by European Commission TMR (Training and Mobility of Researchers) programme and organised by the FORWARD project of the EFI. The course was attended by 25 participants from 16 different countries.

We would like to thank all those people who helped with the practical arrangements, especially Dr. Bill Slee (University of Aberdeen), Mr. Bob Dunsmore (Forestry Commission), Mr. Denis Torley (Cairngorms Partnership) and Mr. Ray Cameron (Fairburn Activity Centre). Also those who contributed in a valuable way the field trip, e.g. Mr. Eric Baird (Glen Tanar Charitable Trusts), Mr. Stuart Benn (The Royal Society for the Protection of Birds), Mrs. Janet Bromham (Cairngorms Partnership), Duncan Bryden (Highlands and Islands Enterprise), Mr. David Jardine (Forest Enterprise), Mr. Doug Lamont (CSC Forest Products Ltd.), Mr. Irvine Ross (The Ross Partnership), Mr. Willie Towers (Macaulay Land Use Research Institute) and Mr. Colin Wishart (The Highland Council), are warmly thanked.

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Joensuu 18 February 2000

Anssi Niskanen

Johanna Väyrynen

EXECUTIVE SUMMARY

The Research course and the Summer school were the first events ever organised focusing on regional forest strategies of Nordic and European scale. Courses were supported the dissemination of the relevant information in the forest strategy formulation process at the regional level. Among other things the recently established COST E19 “National Forest Programmes” focuses the same issues at the national level, as these courses focused at the regional level.

One of the main conclusions of the courses was that due to EU-level policies that often are increasingly aimed to work directly with regions, the importance of regional programmes is growing. Without the regional programmes for forestry, it remains difficult to justify the political importance of forest sector e.g. in regional development funding that is negotiated between European Commission and the representatives of local level authorities. In forestry, this supports the further development of regional forest strategies as programmes for regional development.

As visible as the trend of increased regionality in Europe is the trend of increased peoples’ participation in decision making. Therefore, also forest strategy formulation should be encouraged to be based on participation processes where interests of various stakeholders are widely considered. However, the participation approach e.g. in forest strategy formulation should be separated from consultation processes where the principle aim is to have more information for traditional decision making bodies rather than include people in decision making.

The need for participatory approach in forest strategy formulation calls increased multidisciplinary in forest policy formulation. Under the described trends, it is not acceptable to have solely foresters who prepare forest strategies for foresters.

In the formulation of regional forest strategies or programmes, the process, the negotiations and the implementation should be integrally planned. Without well functioning negotiation processes and participatory approaches, the weight of a strategy or programme will remain low, and will have no changes for successful implementation. In an opposite case, if various stakeholders and common people participate the negotiations and decision making processes, the strategy is much easier to implement.

I

PARTICIPATORY PROCESS

PRINCIPLES OF PARTICIPATORY PROCESSES IN PUBLIC DECISION MAKING

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ABSTRACT

Participatory policy and planning formulation is becoming an unavoidable exercise in forestry field, especially when problems are identified by interest groups and when the traditional planning techniques cannot be legitimated in a democratic system. But there is an important risk of using such an approach as an alibi for legitimating any kind of decision, and the procedures to implement for planning at the regional and national levels have to be based on rigorous concepts, methods and techniques. The example of the implementation of the mixed model is used to identify the main issues to address and the related limits in implementing the participatory approach in forest strategic planning.

Keywords: forest policy, forest planning, participation, direct democracy, communicative action

1. DISCUSSION ABOUT THE PARADIGM OF PARTICIPATION

Participation in forest policy and strategic planning is a recent phenomenon (more than in forest management). It has appeared in the developing countries during the 1980s and, is becoming a paradigm for decision making in forestry also in the North. This is something new in forestry, where decisions have traditionally been made by central administrative bodies, sometimes without any kind of negotiation with the forest users.

There are two main sociologist epistemological frameworks for public decision rationale. The first is the rationalist one, based on a deductive chain of decisions taken by the public authority which is in charge as such of making public choices for the society. In this conceptual framework, the common interest is defined by rationalist norms in a extra-societal way, without any consideration on the needs and interests expressed by the users. In forestry, it is sometimes emphasised out that this common

interest needs to be not only different, but also opposite to these social needs as expressed by individuals. The public authority has an active task of deciding for the benefit of the community.

The second is an incremental one, which considers that the decision is a set of actions taken by a network of relations between the actors (stakeholders) and the representative structures of the public authority. In this framework, the common interest is defined as the result of all needs and interests expressed by the stakeholders. The public authority has a passive role of translation of social expressions. As some of the expressed positions are opposite ones, the solution cannot be a consensus, and it is usually a compromise.

The paradigm of participation may theoretically refer to either of the two frameworks presented above, but it is generally used in the frame of an incremental viewpoint.

Participation is related to the theories of communication. It emphasises that the rationale for decision making is also expressed through communication which is constitutive of the social identity (Mead, behaviorists). In the Habermas theory, the rationale of action does not come from the expected result of the action, but it only derives from the communication itself. One can already consider the important role in any participatory process of information (understanding) and moral aspects (honesty, truth, correctness).

It is also linked with the theory of direct democracy based on participation: in cases where some specific technical choices are to be made, or when there are many opposite positions in society related to the issue (especially when the democratic procedure is not assumed but also in the other cases), an effective solution may consist of making users and beneficiaries directly participate to the related decisions which are to be taken. Forestry gives a particularly good example of such cases.

“Participation” directly results in forestry from a social debate about another paradigm, which is the paradigm of “sustainability”. There are several ways to define sustainability, and sometimes three of them are mentioned: ecological, economic and social. But the most common ideas are that:

- a) these three have to be conciliated in a common frame with a compromise as the result, and:
- b) the social sustainability can only proceed from an involvement of actors through a participatory procedure.

The paradigm of participation in forestry is also related to the concept of multifunctionality of forest management. As multiple goods and services produced by forests are destined to various users, the participatory way to make decisions is a normal conclusion of this. But it is a very difficult one, as the forest values and objectives are multiple and conditional, some of them being incompatible and non-commensurable. How can a result be defined in such conditions? The game theory, by analysing the different possible inter-actions between various positions from players, can help in formulating a public decision based on these considerations.

The paradigm of participation can either change the concept for forest policy formulation, or it may have no effect:

(i) Concept of policy agenda. In the rationalist logic, the way in which the public authority its decisions is a deductive sequence of different rationale steps (problem formation, policy agenda, policy formulation, policy adoption, policy implementation, policy evaluation), conducted directly on the basis of the available information. This concept is normative (the public authority bases its action on norms) and positivist (there is one solution which is chosen as the common rationale one). At different steps of this agenda (especially problem formation and policy evaluation), there is the need for the public authority to get information from stakeholders on their acceptability of some decisions, which has a direct incidence on the future supposed effectiveness of the related choices. This way to proceed in decision making may be considered as promoting a form of “participation” (Figure 1).

(ii) Concept of policy cycle. In this framework, the various actors themselves contribute to build the policy field and its content; the link between stakeholders and representatives from the public authority is the only basis for policy formulation. The iterative sequence is an inductive one, with a sociologist rationale. The public authority reacts to social needs compromising private and public interests. But the system is restricted because it works only on solving problems raised by stakeholders or public authority, and not to strengthen strong points if any (Figure 2).

The participatory procedures can be conducted at the various phases of the logical sequence for forest policy formulation and implementation, to get information (on both facts and ideas) from the participants, and also to have these participants involved into the policy decision for a better effectiveness of the future implementation of the related decisions (Figure 3).

2. GENESIS OF THE PARTICIPATION IN FORESTRY FIELD

The concept of involving people in forest management and thus in planning and policy dates from the 1980s, and the introduction of participation in forestry decision making has first occurred in developing countries. It is an example of transfer of knowledge from South to North. The international agencies have first strongly encouraged the forest administrations in the South to develop participatory procedures in forestry. And the promotion of such an idea had as a result the necessity to introduce participation in the North as well, as a kind of boomerang effect of the “do what we say, not what we do” speech.

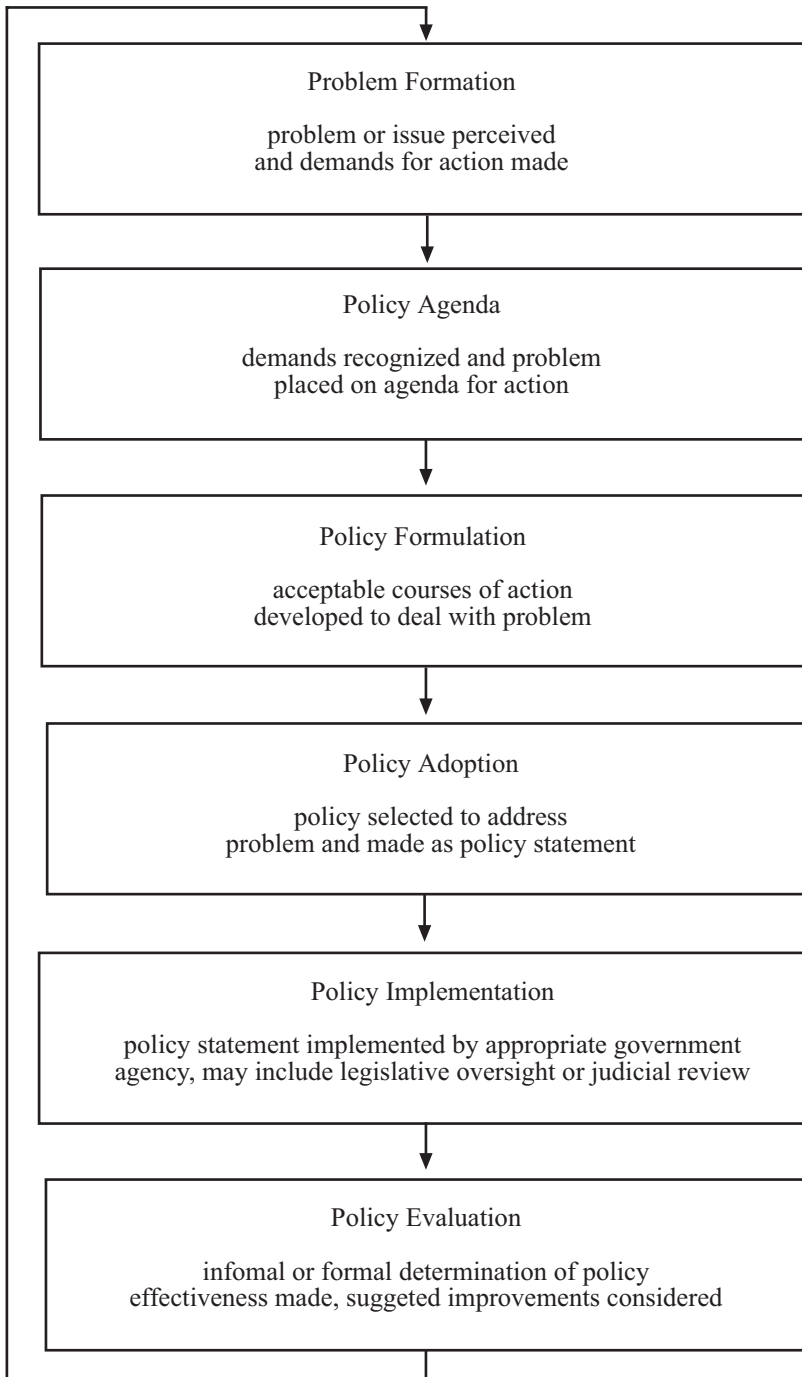


Figure 1. The rationalist policy agenda.

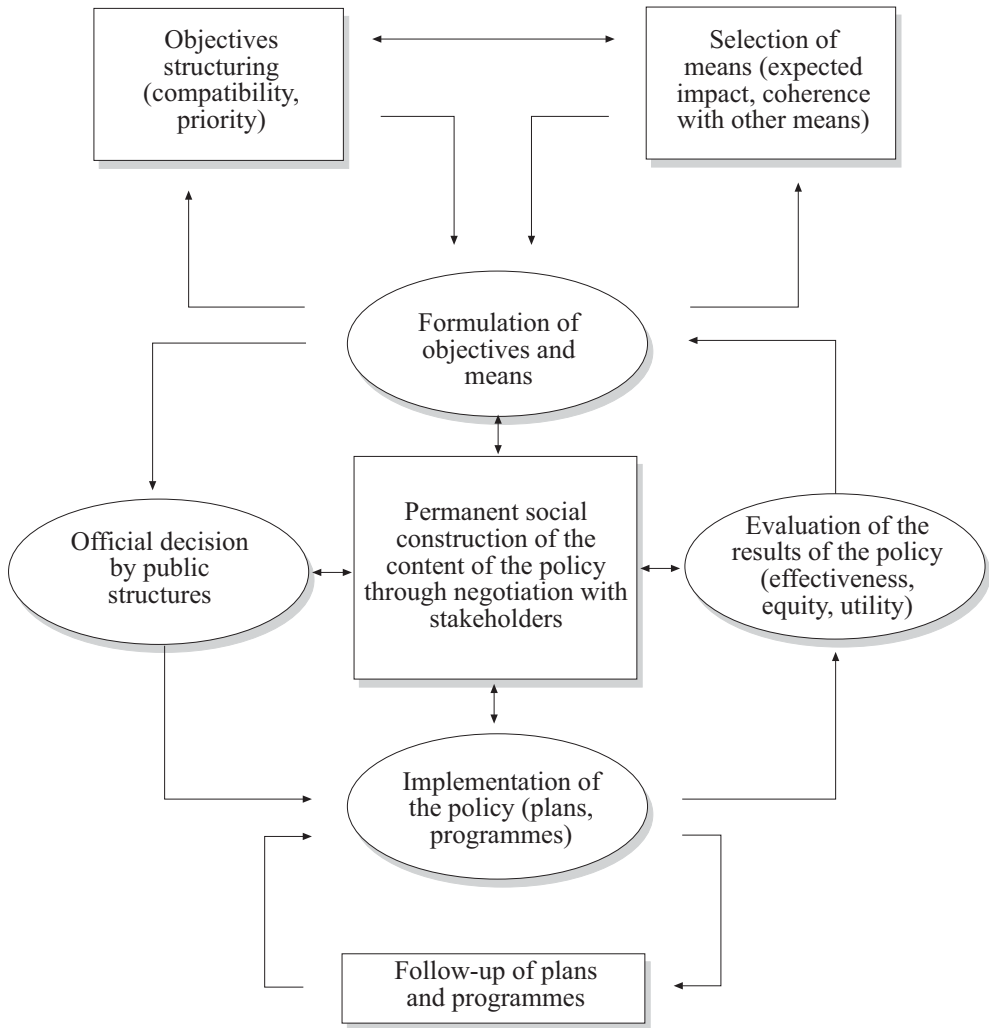


Figure 2. The incremental policy process.

The introduction of participation in developing countries was initially based on some considerations:

(i) The recognition of the role of forests in people livelihoods. As forest products and services form an important part in the rural economy, the idea appeared that people should have a better control of forest land uses, and led to a the more people-centred approach of forest management (concept of social forestry during the 1980s, especially at the FAO); as a conclusion, this philosophy asking for more people participation in forest decisions had as a result a more actors' involvement in forest planning and policy making.

(ii) The critic of the repressive forestry system of regulation by the administrative service. De-responsibilisation of actors, especially the rural population; increase of degradations may be directly linked with the implementation of a punitive system.

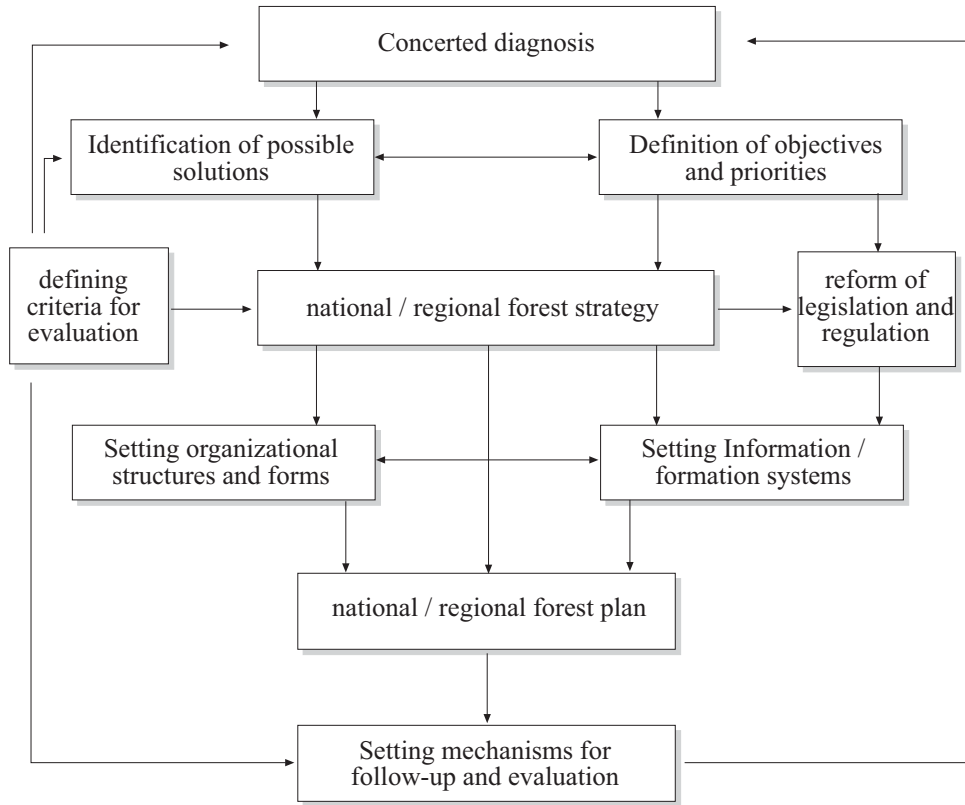


Figure 3. Logical sequence for forest policy formulation and implementation.

The empirical arguments for such a ideology were:

- a) *Ethical*: local people in democracy have to express their positions and participate to decisions that closely effect their life.
- b) *Pragmatic*: in many cases, especially when people are numerous, the punitive system is not effective, and results sometimes in the opposite.
- c) *Administrative*: there is a decrease of the role of the administration, and a change in its tasks related to forest policy and planning decision making. The role of central State is criticised in the framework of the structural adjustment programmes for the national economies; finally, participation has become a framework condition for the most important donors in forestry (the international assistance to the forestry sector in developing countries is presently in phase of decrease).

The implementation of the participatory processes for forest policy and strategic planning vary:

- a) In some countries where the administrative system was neither too repressive nor centralised (India, Pakistan, Nepal), or where there was a de-centralisation policy

process at the country level (Madagascar), the national forestry policy and the system of planning have been completely revised accordingly; sometimes, there was the same approach in policy formulation, planning legislation and local management.

- b) In other countries, only partial changes occurred. In most of the cases, a more limited approach has been chosen, because the concept has been mainly used as a kind of alibi in a strategy of legitimisation of public decisions.

Participation has been used as a slogan by most of the international agencies and national governments, and then, after some difficulties in implementation, the concept of pluralism has appeared too. It means that in some cases there is not an only one possible policy choice, and several solutions need to coexist. The concept of pluralism is presently used by the forestry administrations and donors to defend themselves from external ideas and from possible failures.

Currently, the concept of participation is due to historical reason, more developed in the developing countries than in the North.

3. TYPES OF PARTICIPATION

To “participate” usually means to take part into debates or actions which are mostly defined by others than yourself. As a consequence, participation is by essence a relative concept: one participates more or less. It does not mean by itself anything considering any kind of transfer of responsibilities, and even the access to decisions. There are several types of “participation”:

(i) Resource participation is often used in forestry. Stakeholders are invited to participate because of their input in the discussion, with or without compensation. They can bring ideas or information; their presence can be also symbolic, which may help in legitimising the process or its decisions. This type of participation is generally promoted by the administrative service as an utilitarian approach. The information on facts is usually the main element in the communication.

(ii) Functional participation is frequently used in forestry (but not still the general one). People are called to participate in order to take part in the mechanism of decision making; the participants bring information as in the former case, but in addition they are expected to actively take part in the discussion, in order to have their ideas disputed and changed from the general discussion. The objectives to reach and the related expected results from the debate are defined at the beginning of the process with concrete official deadlines. The information about ideas is both an input and output of such an approach.

(iii) Auto-mobilisation. This term illustrates the situation in which one or several stakeholders take the initiative to provoke the public debate on a special topic, the other participants actively contributing to the solution. In this case, the participation is defined *de facto*. When the decisions are related to the private sector, this procedure may lead to discussions and changes of the structures independently from the public authority.

The levels of participation may also vary. The so-called “passive participation” refers to any level of association where the participants are not considered as part of the decision making process itself, although their contribution is evident. In these cases, participation is only used as a tool for improving the communication between the public authority and actors. The relationship between the public authority and the actors is an unilateral one. It is just a consultation procedure, where:

- a) People may be only asked about the facts of the present situation which are needed for changes in the planning. They do not interfere in the choice for changing, and are called just to give some information on facts, for instance on the way they presently use the forests. The objective for the public authority is to be better informed of what is the present situation before making any decisions in order to solve a problem identified without the related stakeholders. They can be informed or not (usually not) of the results of the process.
- b) People are asked about their ideas about what to do, what to plan and how to plan. The initiative still belongs to the public authority, but in this case its objective is to know better what is the problem and what to do to solve it, whilst getting new ideas and some indications about the possible future reception of the decisions it could take. The participants can be informed (usually they are) of the related results in terms of decision.
- c) People are asked about their position concerning some possible decisions proposed by the public authority. The objective is for the public authority to know better the effectiveness of what to do whilst testing possible solutions, and to have people more conscious of the problem-solution system and the necessary need for a compromise. Participants are generally taken informed of the solutions, and have the possibility to discuss them in order to have a better compromise.

All these levels of participation usually refer to the resource-participation, may be merged considering the special topic to discuss with the “participants”, and are very often promoted by the forest service itself, especially at the central level.

At the opposite, one can define an active participation, where the participants contribute more or less directly to the decision making, through a negotiation procedure with multilateral relations between the public authority and the actors, in the following increasing ranking:

- d) People are questioned about their knowledge, positions, ideas and on the proposals they make for solving the problem. For the public authority, the objective is to get additional information concerning the possible means to employ, and to know exactly the position of each participants from this viewpoint. This also can save time in problem solving in case the decision makers have not a lot of information on the related topic. To know what people want before proposing what to do is a common exercise for administrations; when some interest groups are constituted, this works almost automatically, through the lobbying exerted by these groups. The participants are informed of the results, but still do not participate directly to the decision.

- e) People are asked for their proposals, and the public authority directly discusses the final solution with them, whilst making this decision through its own rationale. This strategy, which consists here in defining what to do considering what people want to be decided gives the possibility to have the participants conscious that their ideas have been taken into account in the final solution. This can be done with all the actors, or specifically with some of them only. People are of course informed of the result, which is usually presented as linked with the expressed proposals.
- f) People are asked for their proposals, and the public authority makes a decision directly traducing the compromise obtained through an active negotiation with one or several stakeholders. In this case of real negotiation, which is not the more frequent one, the real engagement of the public authority to implement what is the result of its discussion with the participants, gives the guarantee of the final involvement of the people into the implementation of the decisions afterwards. In forestry field, with various opposite positions, it is not easy to do something which people commonly accept as what to do.

All these different ways to “associate” people with the decision making exist in the reality, all of them being called “participation”, especially by the public authority. The concept of participation itself is unclear, and needs to be defined to get a rationale and a concrete meaning. If not, there is some risk that the word may be used for hiding some strategy which has nothing to do with association of stakeholders and democracy.

The public authority is not always aware of making people participate actively to define the policy choices. In some case, it even calls “participation” the only information of the representatives from the interest groups in the public decisions which have been already taken without any former co-operation. This way, of course, is not a participatory one.

4. AN EXAMPLE: THE MIXED MODEL

The so-called “mixed model” for forest policy formulation is one of the more sophisticated ones implemented at the regional and national levels. It has been conceived for changing forest strategies in developing countries following the conclusions of the international debate on sustainable management of forests. The mixed model has been effectively implemented at the country level and supported by international donors and agencies. It can serve as an example for identifying the main challenges and limits of participation in forest policy and planning formulation and implementation. The mixed model is based on the need to conciliate by following viewpoints:

(i) The rationalist viewpoint on formulation of planning. There is for the public authority, especially for the forest service, the need for a clear deductive agenda, with precise links between the expected results, objectives and related means in order to make the evaluation easier afterwards (transparency and logical deductive framework for decision making; effectiveness as an expected result of the participatory process).

(ii) The sociologist viewpoint related to formation of the forest policy. Its main objective is to guarantee the effectiveness of decisions to be made by taking into consideration the actors' needs and positions (democracy and expression of social needs, equity as an expected result from the participatory process).

The related procedure, in which public forest administration generally acts as a major contributor, has to conciliate a logical rationalist sequence for identifying and classifying principles, objectives and means (normative and deductive logic) with a participatory approach (systemic and inductive process).

The mixed model considers forest policy making as a systemic process (Figure 4) including the following phases:

(i) Diagnosis of the present situation. On the basis of information coming back to the public bodies from the interest groups directly, or from conclusions driven by the public authority and other agents through a problem identification exercise, issues to address are identified, and needs for changes are formally expressed. This phase may lead to the establishment of an analytical problems-tree.

(ii) Formulation and structuring of objectives. Then to solve these problems, new objectives are determined through a permanent discussion with the largest number of interest groups, even with those which were not directly concerned with the first expressed needs for changes. Objectives are to be structured, divided into aims, orientations and sub-objectives, and classified considering their mutual compatibility and the time priorities.

(iii) Identification of means and grouping into a comprehensive strategy. To each sub-objective, correspond several possible means which are defined and classified considering their supposed effectiveness and their coherence with other means. They are then regrouped into lines of action which give the general strategy for implementing the new policy.

Although these two phases consisting of objective structuring and selection of possible means are obviously logically linked and sometimes conducted together, two feedback loops appear giving them consistency.

The first one is related to the objective definition and classification. Generally speaking, objectives can be defined as favourable situations in which the previous identified problems could not appear. For instance, when forest depletion is considered as one of the main problems to solve, protecting the present forest area from destruction may appear as an important forest policy goal. New aims are defined or re-written in a way they can respond to expressed needs while conciliating with other objectives of the forest policy, fixing a new balance in the social compromise. As it is always impossible to satisfy all possible needs with the available resources, only feasible objectives have to be selected. A first criterion for selecting these aims is their compatibility with other objectives because forest policy has to remain as a comprehensive whole. Then the new global complex of objectives is classified in terms of precedence, giving the priority to those which must or can be reached at a short notice, or to those which have necessarily to be treated before considering other objectives.

The second feedback loop is related to possible means. Their identification is usually done at the same time when objectives are determined, and even sometimes before,

because very often interest groups propose solutions to public authority directly whilst expressing their critics. These means are ranked considering their supposed effectiveness and also sometimes their efficiency (cost-benefit analysis), and some of them are excluded. It may be possible not to define concrete means at this step, and in this case, the objective structuring can be called in question again with the same procedure as described before.

Finally, selected means are implemented through structures which are generally directly managed by the public authority, or which can sometimes be co-directed by the State and some selected interest groups. In any case, follow-up of the implementation is facilitated when economic and social forces' representatives collaborate with public bodies through a consultative administration. In this frame, even at the implementing phase of the procedure, the negotiation with interest groups has to continue, giving more flexibility and adaptability to the forest policy decision making process.

The negotiation between public authority and interest groups is introduced at each phase of this process, through a technique based on the following steps:

(i) Preliminary enquiries. Participants to the process, including representatives from the public bodies, are directly and personally asked about the main issues related to the discussion. Both interviews and open questionnaires may be used for this purpose. The objective of this first step is to collect all information on the position of each group represented into the discussion on the possible needs for changes in the present situation. This firstly requires a complete listing of the possible participants to the process, based on the identification of all the various existing uses of goods and services procured by the forests.

(ii) Working group. The information collected from interviews and questionnaires is confronted to expert analysis of the present situation in a working group which is in charge of making all necessary synthesis, and of preparing and sometimes moderating the common discussion in the following step. This working group is in charge of all the technical tasks related to the process, and reports to an official commission established at the political level.

(iii) Seminars (or workshops). This step is the more important of the process. It consists in confronting participants' ideas, information and positions concerning the issues, through a collective discussion where each participant publicly expresses his own position, changing it from knowing that of the others. Progressively, the positions expressed by each of the participants at the beginning of the procedure on some of the disputable points change, and make the negotiation of a common solution possible. The organisation of the workshops and seminars is a very technical part of the process, which needs to be conducted using some criteria based on experience. For effective work, groups of 15-25 persons are preferred. A sound empirical balance between participants is needed (not more than 50% of participants from public bodies, including not more than 33% of foresters), and the technique of the cards on boards usually employed for promoting a complete open discussion. An independent facilitation with rigorous and honest moderators (coming from universities or independent agencies, specialised in the topics discussed rather than in discussion leading techniques) is the best and maybe illusive – solution.

(iv) Official conferences. The results from the discussion are expressed in an official way as common solutions through press conferences chaired by high level politicians, where the final compromise is mediated and disseminated.

During the first steps devoted to public policy formulation, a compromise between different positions is expected through the negotiation with stakeholders by the means of selected techniques of mediation. But as soon as the question is to implement this policy lines and to define a strategic planning procedure, the consensus from all actors is required. Normative methods for decision making, such as the logical framework analysis based on the link between objectives, expected results and related means, are preferred. They also need to be implemented in a participatory way, with different techniques of facilitation and different groups of participants.

In the mixed model, the structure of the participation translates into practices and institutions a complete bottom-up approach (Figure 5). This procedure is conducted at the regional level first, and then the same techniques make the aggregation possible at the national one.

Some framework conditions are required in order to have an effective implementation of the method. The success in the negotiation procedure needs:

- a) A clear and concrete challenge to address.
- b) Some willingness (from stakeholders) and engagement (from the public authority) for a reform of the present system: public deciders have to be convinced of the interest of the procedure; if not conditions for an effective implementation of the deducted decisions do not exist.
- c) A minimum consensus on an open discussion without excluding any possible participant. The working groups have to be composed in a way that could facilitate discussions and compromises.
- d) A real negotiation and not a list of expectations which could not be compatible together. Sometimes, the process appears as a sort of challenge for different clans into the forest service and interest groups which compete together bringing their own solutions that depend on special and generally immediate interests.
- e) A solemn statement for an acceptance of the results from the discussion by the public authority (this is rather difficult to have). At the end, the forest plan has to be presented in an official way through a public declaration.

5. LIMITS IN PARTICIPATORY PROCESSES

Any participatory approach is an difficult exercise for logical reasons:

- a) Each participant has his/her own concepts, perception of the reality, and language for expressing this reality. Tools and conceptual frameworks are different because expected results are also different. Pluralism means incoherence.
- b) The object of the discussion is a complex system (and not a structure, because the most important components of the problem are the links between the elements) which is determined by political and normative assertions.

In order to avoid from some difficulties, the following questions are to be asked at the beginning of a participatory planning procedure:

- a) Who are the participants? On which criteria they are considered as such? Who has established these criteria? Has a special study of forest uses been conducted before? Who is missing and why?
- b) Do the communication link all participants together, or each participant with some of them (public authority, forest service)? What are the formal limits of the system? Who defines these limits?
- c) Do the participants have some common objectives? Which ones? Are they different from the objectives of the public authority? Who decides of the framework conditions? Do all the participants know them, accept them?
- e) In discussion and in decision, who is legitimated to express itself, and in which conditions? How are selected the topics to discuss about? How is the agenda for negotiation planned?
- f) Is there a joker attributed to public administration (as a representative of the public authority)? In case of yes, does each participant accept it? What is the role of the forest service in the procedure?
- g) How will the decision be made afterwards? Are the present structures of decision adapted to the logic of collaborative and participatory processes?

Some limits anyway exist in the participatory approach for forest strategic planning.

- a) Auto-maintenance of the discussion policy process. Even from a theoretical viewpoint, this process is a continuous one. At the end of the described procedure, the various representatives from interest groups do not come back to their own members considering the compromise as their own position. Each interest group has surely changed his mind compared to its first positions. But each of them has his own new position, which defines a new situation where exist objective possibilities of expression of needs for changes in the final found solution. And the process may never end.
- b) Difficulties to negotiate because participants are numerous and opposite. As forestry is a multifunctional field of action, there is a lot of existing uses, a lot of interests to represent into such a discussion, and a lot of people to associate to the procedure at all the various phases and steps. There are numerous contradictory issues, on which different participants may oppose themselves each time. A rigorous technique for compromising needs many efforts and a lot of time. Sometimes, it is even theoretically impossible to find a common solution.
- c) The results derive from the technique of facilitation. The technical way in which the procedure of association is conducted is very important for the result. There are techniques for having a more open debate (e. g. the cards on boards, but also the establishment of questionnaires and agenda for meetings). But there are also techniques for having a preconceived result, and these ones may be frequent, as participation is sometimes used as an alibi. Discussions have to be facilitated by independent mediators, who are more recommended than public officers for helping people to find adapted solutions: organisations such as NGOs, universities or private consulting offices are preferred. For this special and difficult job, a very good knowledge of forestry challenges together with a

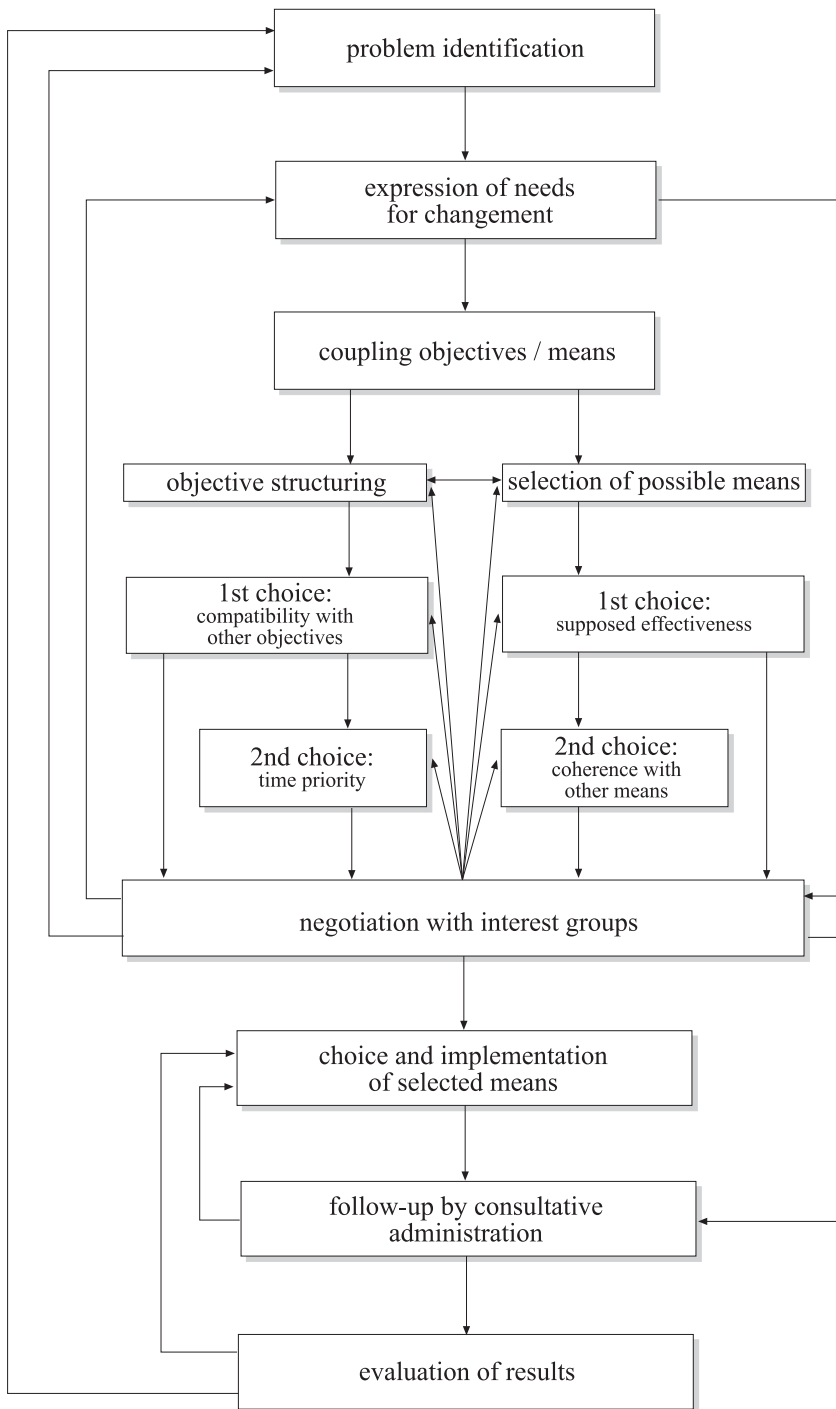


Figure 4. The forest policy making process as defined in the mixed model.

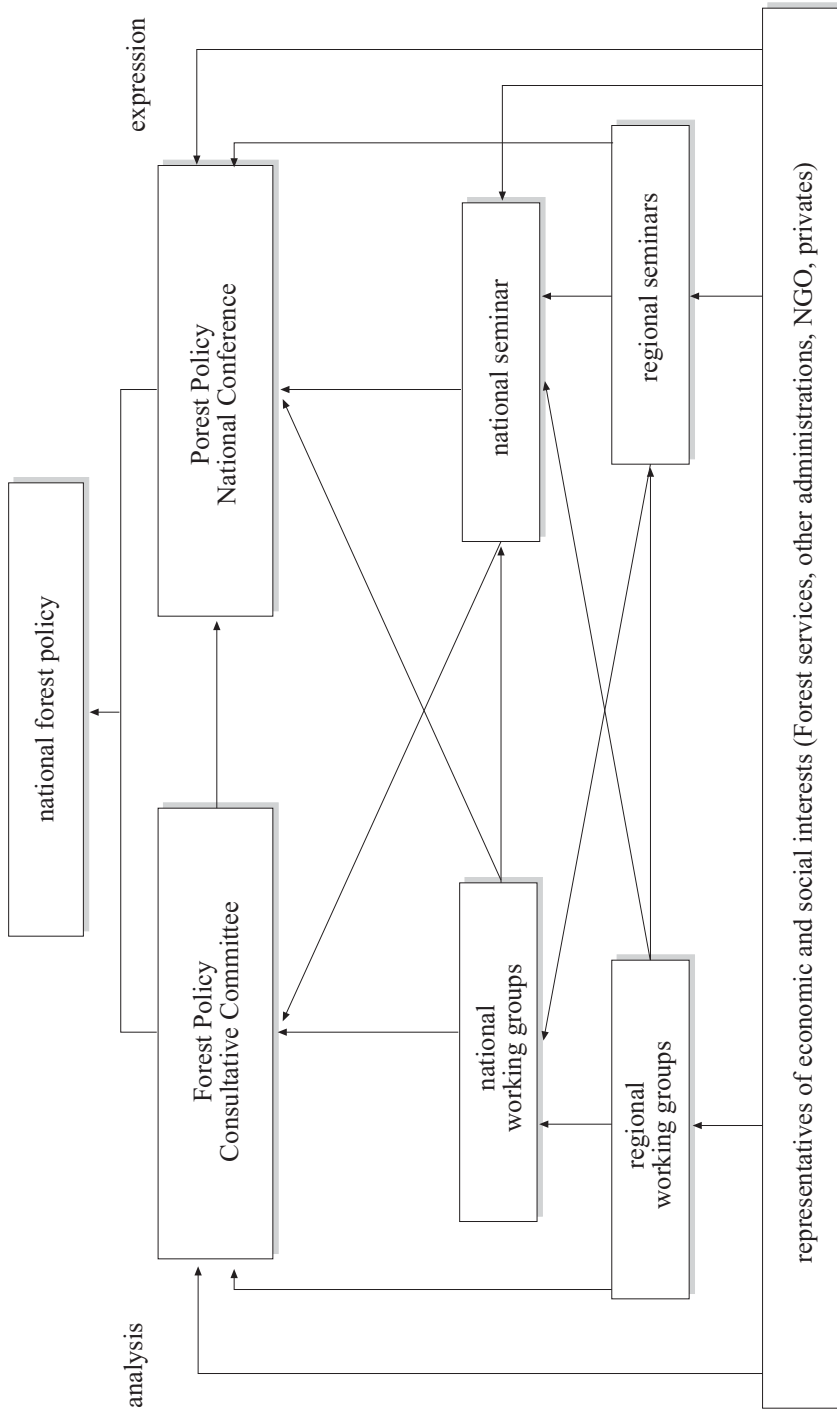


Figure 5. Example of structure of participatory approach implementing the mixed model.

mental disponibility for conciliation come to help rather than a strong experience in meetings animation techniques, which very frequently leads to clinch down the discussions.

- d) The process consolidates the position of the more structured groups. A formalised participatory process may bring some changes in the balance between the various stakeholders. It can first bring new issues, and so new participants, into the discussion: when some interest groups are used to restrict the debate with public authorities to some special topics, they do not appreciate this change very much and they try to eliminate the new topics from the discussion. But finally, in a formal debate, the formal groups are much more prepared to defend their own solutions. This is particularly evident in the case of the industrials and the forest service, who usually benefit from a previous organisation for promoting a set of ideas and positions. Finally, it can be concluded that the pluralist model is not able by itself to automatically warrant a complete equity of decisions.
- e) Some needs are very difficult to take into consideration. In forestry, some needs are defined in very general terms and concern all kind of citizens: the production of pure air, the regulation of water and more generally all kind of public services can be assimilated to social needs without any particular representative. The availability of a participatory process will be better in case where only specific forestry problems are expressed, or when the production of marketable goods is the main goal assigned to forests. Usually, a special study based on qualitative enquiries is required in order to get a good picture of what are the present uses of the forest resources by the society at various levels.
- f) The extreme positions are excluded from the debate. When opposite positions are confronting, they can lead to a compromise only if they are considered by the related participants as negotiable ones. In forestry, some positions may not be conciliable, for instance, in the field of environmental protection. The only possible solutions are to exclude the related topics out of the discussion, or to discuss these only with participants who agree to do so; in both cases, the result in terms of policy decisions may be only a partial one.
- g) There is no automatic validation of the results by the public authority. Officially, the public bodies are the only structures in charge of decision-making for the community, and their implementation, even in democratic systems. They are the only responsible from this viewpoint before the citizens. In such a frame, they are never obliged to implement the results from such an informal discussion. Even in the case a national official commission is established to conduct the process, its role is usually an only consultative one. But an official declaration from the highest possible authorities in the country can give some insurance, so some credibility, and so some effectiveness to the negotiation.
- h) There are important transaction costs. Such a process is very much costly in time, energy and also money. To conduct the reform of the national forest policy and planning in a country using the mixed model, it usually takes between one and two years, and mobilises more than one hundred persons participating into the various workshops and seminars. A working group including from 3 to 6 experts can be acting in a quasi-permanent way on such a process. When all the

forestry issues are concerned together and the procedure is conducted with all its components, the global cost may finally vary from 0.5 and 1 mill. EUR per year. But this amount is to be related to the benefits obtained through this procedure in terms of effectiveness and efficiency of the measures taken by this way. A lot of time in discussion can also be saved for future more technical choices.

- i) An active participation requires a redistribution of power from the public authority to the actors. The effectiveness of the process is more important when there is a real challenge in terms of empowerment among the different participants. In cases where the public bodies do not intend to share their authority with some of them through a negotiation participatory procedure, and use the participation just as an alibi or mean for justification, all this procedure may lead to opposite effects. The issue of empowerment has to be clearly discussed at the beginning. It is never the case of course, for political reasons.

These limits are sometimes used to restrict the direct participation in the forestry field especially when the administrative service wants to keep its own power for decision making. But in most of the cases, the participatory process is very useful, for both:

- a) The participants because it gives some content to a democratic procedure, where people interested can express their viewpoint. This gives some concrete and positive finality to interest groups structuring. For the participants to the process, who usually are in a leading position into their respective interest groups, the process gives some legitimacy; these representatives generally strongly support such a process for this only reason.
- b) The public authority itself because it both gives a better legitimacy to the decisions taken under its responsibility, and avoids it from critics in case of non-effectiveness of the related measures. The participatory process leads to share the responsibility between public authority and the direct actors. In a framework where the public authority is often criticised, this can lead the public bodies to strongly encourage such a process. As a fact, all the forest services involved in such an exercise have finally understood whilst doing it the benefits they could draw, although they had been very much opposed to the participatory approach which had been very often imposed to them at the beginning by the national politicians or by the international official engagements.

These political advantages are the main empirical reasons why “participation” will probably remain for the next years as the dominant paradigm in forest policy and planning formulation and evaluation.

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NEGOTIATION METHODS TO SUPPORT PARTICIPATORY FORESTRY PLANNING

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ABSTRACT

Negotiation for conflict resolution is one of the main elements in participatory processes aiming at regional and national strategic planning decisions. In forestry, the importance of negotiation is increased due to the number of stakeholders involved as participants in regional planning decision making, especially when a multipurpose management is required. The various techniques used in participatory processes for the negotiation have complementary advantages and inconveniences. The constructive confrontation method, if rigorously implemented, may bring significant results.

Keywords: forest policy, forest planning, negotiation, conflict resolution, environmental mediation, constructive confrontation

1. CONFLICT AS A BASIS FOR POLICY FORMATION

Conflict is something normal in society, giving society its dynamics. Most of (all?) the public decisions are made for solving, or at least for limiting, existing conflicts. As society is evolving through solving conflicts, the negotiation with various opposite partners is constitutive in public policy and planning making. This importance of conflicts in social dynamics is mentioned in various theories:

(i) Theories of social stability. In the systemic theory as an example, a social optimal is by principle considered as illusive, and society is always adapting to changes to find another balance and stability: conflicts are the main elements of non-stability that the system has to solve. In the structural theory, some conflicts arising among actors can lead to change the structure. As it is the case in the system theory, conflict is considered as having a negative effect, which has to be compensated through social procedures. Conflict is a problem to be solved. But conflict is basically constitutive of society.

(ii) Theories of social change. Society is always changing to reach new steps, new balances (example of the developmentalist and marxist theory); conflicts are the main elements in change, a basis for analysis. Conflict has a positive role in social development, and can be controlled and even managed for a better development. In this case, one speaks about conflict management instead of conflict resolution.

The negotiation for conflict management or resolution is a central aspect in participatory processes. Theoretically, conflict resolution is inherent to any kind of participatory approach: as the various stakeholders may have opposite interests (e. g. access to a restricted resource such as forest), the methods for participatory decision necessarily includes some specific techniques for conflict resolution. Formally, a participatory process may aim at avoiding from expected future conflicts. In many cases, such an approach is chosen in order to have the possible conflicts suppressed before expressing through a former negotiation. The objective here is to define a conflict management based on a procedure for dissolving conflicts before they appear. In some (frequent?) cases, the formal techniques which are employed through participatory processes can lead to hide the conflicts, instead of solving them or protecting from them.

Conflicts are raised when opposite positions are expressed by stakeholders, i.e. interested individuals, groups or institutions affecting and affected by the programme, action, decision, etc. In a democratic system, the public authority discusses with stakeholders the decisions it makes.

2. SOCIAL NEEDS AND INTERESTS

Conflicts come when participants to the public discussion are various, and so are their positions which are often opposite. In forestry, the following categories of stakeholders exist:

(i) Various components of the public authority (political parties, administrative structures including the forest service at various levels). The representatives ask for a better control and more regulations for macro-economic and social goals and correction of market failures. They base their position on the philosophy that the privates cannot regulate their activities on the long run. Their objective is to increase or at least consolidate the administrative power. When expressed by representatives from the forest service, this means very often an increase of the authority of sectorial administrative structures compared to the other ones (such as Ministry of Environment or governmental institutions promoting agricultural development, and regional and local general administration). The logic here is a positive technical one.

(ii) Various types of forest owners (State, communal and regional, privates). The related representatives generally look for preserving the best freedom and autonomy of decision to the owner. They try to restrict the willingness of State to control, regulate or tax the ownership rights. They aim at being as free as possible of deciding on the basis of their proper tactical individual or collective objectives. The principle here is that owners' responsibility means efficiency. They ask the public authority to pay them for maintaining positive externalities.

(iii) Various types of forest managers (forest agencies at various levels, institutions, etc). They ask the policy to take into consideration the micro-economic objectives and constraints of forest management. The principle is that the long term effects forestry management whilst decreasing the benefits. Their objective is to establish financial compensatory incentive measures such as subsidies, low interest rate loans and grants by the public authority, at least during the first years of forestry investment. These means can be linked to the market or not, depending of the economic dynamics of the related representatives.

(iv) Various types of users (of products: timber, hunting, fishing, mushrooms and plant collection; of services: recreation). As these participants are various, they can express various positions. But all of them tend to give more power and freedom to other users than forest owners and managers. The principle is that the forest is to be considered as a common good, as a collective patrimony to be managed for the benefit of the all community. Some of them defend very private interests (for instance hunters or some specific users).

(v) Citizens (all concerned with the general roles of forestry, including protection, global environment protection, pure air, etc.). It is rather difficult to have this category represented as such in a negotiation which is related to precise topics.

As there is the need for access to a limited resource by various categories of stakeholders, most of the demands are incompatible ones, and the particular multifunctionality of forest management at various levels creates many conflicts (both general and concrete).

Usually, the stakeholders' positions are expressed through formal structures called interest groups. But this is not the more frequent case in forestry, where social needs can exist out of these considerations.

A social need is a coherent set of commonly shared ideas and opinions, linked with ideologies and beliefs, on which a group of stakeholders generally agrees. There are various levels of expression of needs:

- a) expectation, when the related needs are not formalised, and even sometimes not expressed;
- b) demand, which is the common way to address the public authority, even when it is not formally expressed through formal structures; and
- c) exigency, when the demand, which can be expressed in a direct or indirect way, is expressed as non-negotiable.

The interests are the economic, social, political and ethical reasons which can explain the related needs. Interests are not expressed by definition, but they can be easily readable when interest groups express their position on a special topic.

Formalised interest groups (lobbies) are constituted for expressing social needs representing precise interests. However, all kinds of needs are not represented by this way. The negotiation process between public authority and interest groups changes the nature and the content of their demand and also the status and the force of representation (Figure 1).

In order to take into consideration those needs which are not formally expressed through interests groups in forest policy and planning formulation, special investigations

need to be conducted. The most sophisticated method for approaching this question is to compare the results of both formal interviews and open enquiries based on questionnaires addressed to every kind of users of forest goods and services in an area. These enquiries need to be conducted at the beginning of any participatory planning procedure, especially when the regional level is concerned.

On the contrary, most of the participatory processes are based on the simplified model of the interest-driven approach, which emphasises that the only rationale for decision is interest. In this logical framework, every decision by the public authority is considered to be based on the rationale of carrying out expressed formal interest as actions. (Figure 2).

But this is a restrictive new of the democracy, especially in special fields such as forestry where needs do not always correspond to interests, and where interests are not always formally expressed through structures. This approach has led to effective results in the case of productive policies, where interests were comparable and it is easy to reach a compromise. At the regional level, for instance, various kinds of owners and managers can easily agree on simple compromises on the way to manage forests in a productive way, linked to market economy. But in cases where multipurpose management is required with various opposite interests, some of them linked to environmental considerations, this simple model is not relevant.

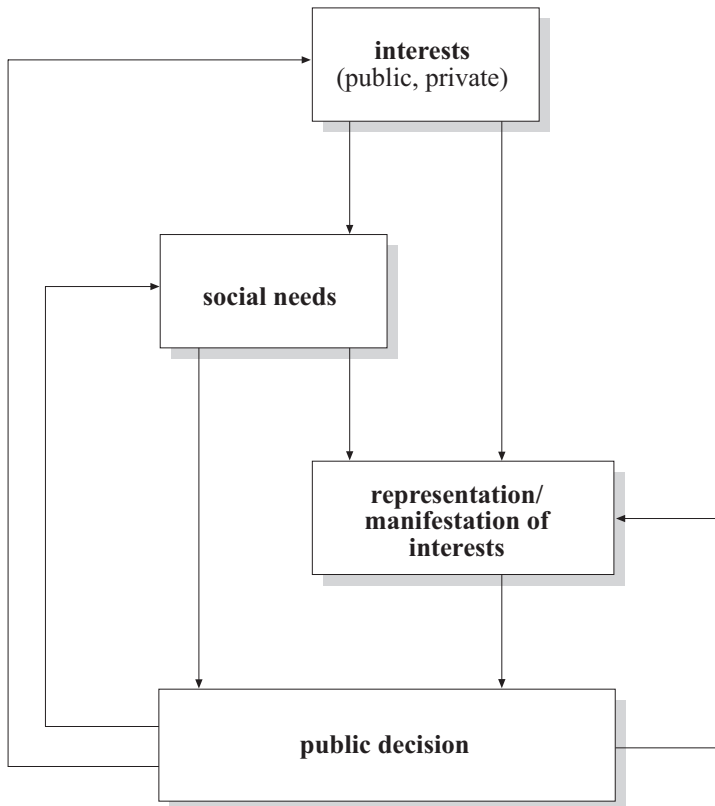


Figure 1. Social needs and representation of interests.



Figure 2. Simplified links between interests and needs in the interest-driven approach of the public decision

3. THE ROLE OF INTEREST GROUPS: IDENTIFYING PROBLEMS

The interest groups are formal associations of members (individuals, public) who share the same interests, which they agree together to promote or to defend. Their task is the address to public authority with special demands for policy orientation.

An interest group is defined by its members' social status and by their objectives. The organisational structure is usually based on an election of representatives, who refer to a board. Some of them publish newspapers expressing the ideas. In the forestry field, there are both sectorial and non-sectorial groups. There are two different categories of interest groups:

(i) Citizen (or public) interest groups. These interest groups promote ethic considerations about the role of forests in society in general. In forestry, such organisations usually deal with environmental questions. The interests defended by most of them are considered as “public” ones, but sometimes private interests can be hidden by ethical assertions (example of bio-diversity and pharmacist industry). Their demands are expressed towards to political power at various levels (local, regional, national, international). Considering environmentalist preoccupations, they tend now to be expressed directly through politicians' declarations and speeches, usually at local and international levels. These interest groups can be sectorial or non-sectorial (generally non-sectorial, except in selected places where forest plays an important social role).

(ii) Private interest groups. These interest groups defend economic preoccupations, related to property or production of commercial goods (public and private forest owners, harvesting enterprises, merchants of wood based products, producers of processed products, etc.). The pressure is usually exerted on sectorial public authority at the national level (forest service). Some of them are trade associations; in these cases, the preoccupations are linked to the market, and they are not constituted for only lobbying, but also – and sometimes mainly – to give to their members a better information on the market (processed products, merchants). They of course lobby at the same time in order to ensure the promotion of their products. The associations of technicians and specialists in forestry defend both ethical considerations and private interests. Private interest groups usually are sectorial ones.

There are various ways of expression which correspond to various strategies of representation of interests.

(i) Co-management. Stakeholders and the public authority manage together the forests, through sharing responsibilities in a balanced way. They both assume the related authority and responsibility. This means that:

- a) the compromise is fully accepted by all participants who engage themselves in getting it implemented;
- b) every participant fully agrees on every aspect of the solution which is a real consensus; and
- c) the public authority is not able to implement the solution alone with sufficient effectiveness, efficiency and equity.

(ii) Co-operation/education. A compromise is fully accepted by all participants, but the public authority remains as the main official operator in implementing the decisions. The concertation between public authority and interest groups is permanent and effective. The interest groups accept a special role in educating their members and the public in order to have the decisions implemented in better conditions.

(iii) Lobbying/pressure. This is the traditional and more frequent way to negotiate for a compromise of the public authority's and the pressure groups' positions. The pressure can be conducted with various philosophies (expression of ideas, expression of needs for changes, proposals for changes in means or objectives), through various means (newspapers, demands for meetings, congresses, informal discussions with representatives from the public authority, etc.), and towards various targets (forest service, Parliament, other Ministries, local politicians, etc.). During the negotiation procedure, there is a frequent assimilation between the objectives and means and between the needs and interests due to the action of these interest (pressure) groups.

(iv) Confrontation/demonstration. This way to express positions usually results from a situation where some needs (interests?) are not (cannot be?) negotiable. This means a strategy of alerting the media (giving a more audience to the demands) and/or imposing decisions to the public authority (deny of legitimacy of the traditional instances of negotiation). In forestry, this category of action is generally restricted to environmental and social problems which are more difficult to solve by the usual ways.

(v) Violence/civil disobedience. In this case, there is a total deny of legitimacy of the rules of the game, and some stakeholder(s) can decide to play separately from the system. In forestry, this occurs rarely, for instance, when the existent decision-making institutions are not based on democratic principles (e. g. no structure for representation of selected interests) or/(and?) in case of very grave conflict on environmental preoccupations (illegal logging in reserves, as the most frequent example of such an action).

In forestry, especially in democratic societies, lobbying and pressure are often used. But in this framework, the balance in decisions between the satisfaction of the objectives of the public authority and those expressed by the interest groups is particularly unstable. Negotiation is the general procedure for consolidating the stability of this balance and directing it towards further co-operation and co-management as well.

4. NEGOTIATING A COMPROMISE BETWEEN OPPOSITE POSITIONS

There is a difference between a negotiation and conflict resolution, as they are utilised into the participatory processes.

The *negotiation* in a participatory procedure for strategic planning is a discussion which is both global, systematic, and involving all participants. Sometimes some topics to be negotiated have not appeared at the beginning of the process, all kinds of possible problems are indentified for solving them in advance. All that is decided at the end of the process is to be first negotiated among the participants.

The *conflict resolution* is a special procedure which tends to find a solution between two or several precise positions. It is partial (it usually concerns a special topic), occasional (defined by the problem itself) and selective (a general figure is an opposition between two stakeholders on a special topic, generally not more than three). It can only occur when the conflict is formally expressed by the related stakeholders.

All can theoretically be negotiated or discussed: the means to define; the objectives to achieve; the expected results from the policy; the analysis of the present situation and the needs for changing. In the mixed model, all of the items are discussed and negotiated through a progressive sequence. In the FAO “decentralised planning” procedure, all the items are discussed in the same time. The usual procedure when a participatory process is engaged is to negotiate only the means. In all kind of procedures, interests and needs are not negotiated, because they are formally defined in the participatory process itself. But of course, the various stakeholders’ needs and interests are continuously adapting themselves to the dynamic of the process, through a kind of objective non-declared and informal negotiation.

As for the technical viewpoint, for experts involved in assisting participatory processes, there are several consecutive steps into a negotiation process (Figure 3). First is *investigation*: this means a collection of information (about facts, about ideas) from individuals; usually, these ones are chosen as supposed to be representatives of identified needs or interests.

Facilitation is a second task, consisting in bringing participants together and collecting their position when defined in a common discussion. Usually, the stakeholders’ position changes from the individual expression to the public debate, because of two main reasons: There is some additional information from the environment (the other stakeholders) which theoretically changes the initial position and The positions are not expressed in the same way, and so have the same effect, when they are private thoughts or public declarations.

Then comes the *mediation* itself, which consists of assisting the opposite participants in confronting and changing their position in a context of imposed common solution to be found. In a case of a conflict, this is not the usual spontaneous situation, and therefore mediation requires special techniques.

The *negotiation*, which is the key step in the procedure, takes place among two or more (usually not more than three) participants in order to find a common formulation/solution. The public authority, or one of the representatives from an administrative office, can be one of them.

The conciliation is the action from the public authority consisting of drawing two or more (usually not more than three) opposite participants to find a common solution/

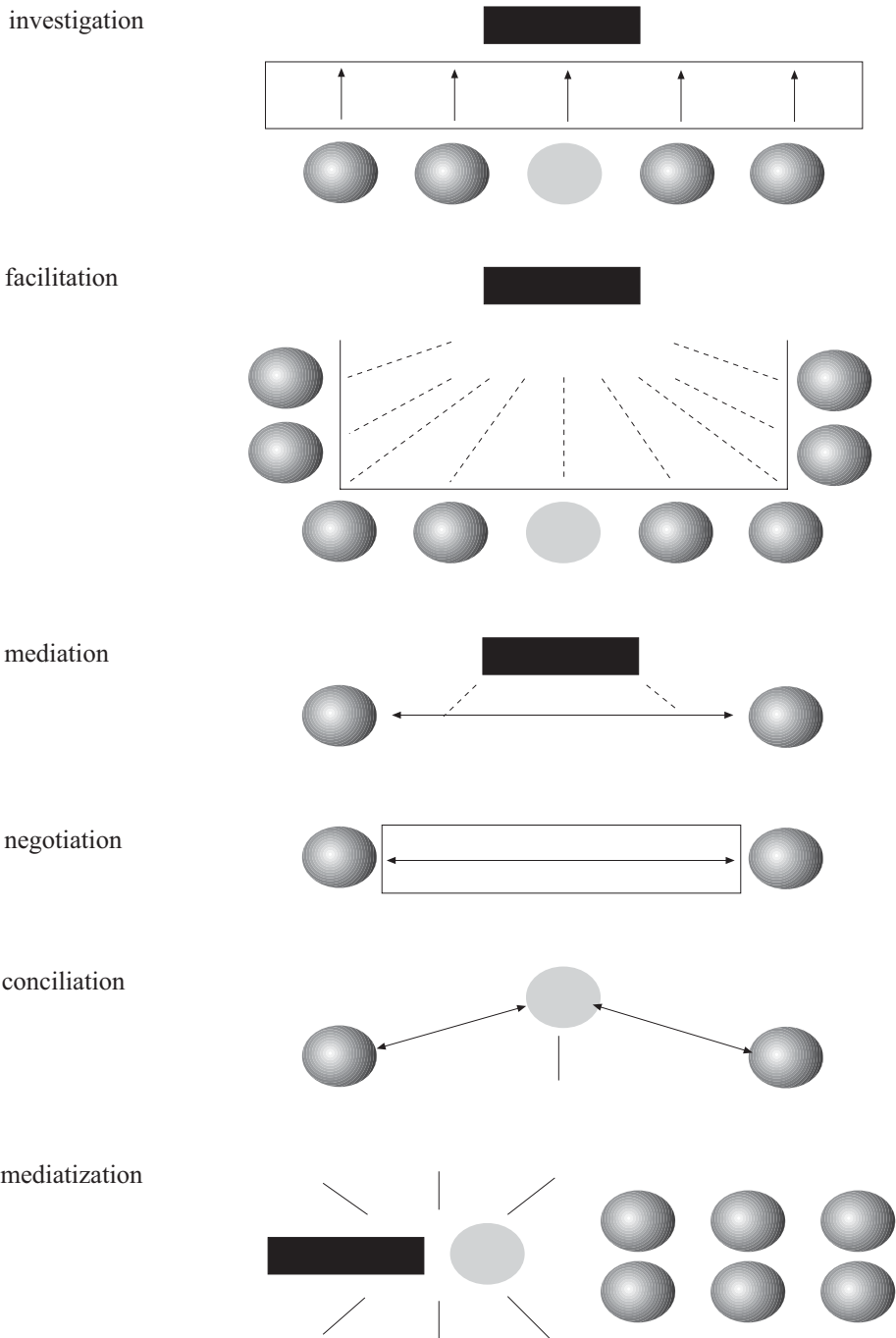


Figure 3. Steps in conflict resolution.

formulation. In this case, the public authority negotiates with each of them separately on the basis of the information drawn from the former discussions. It is a final step of the negotiation procedure.

Last but not least, the *mediatisation* of the solution gives information by the public authority and/or the facilitator (usually and) about the result destined to all people interested (participants and non-participants). The presence of the participants at this mediatisation step is supposed to express their final agreement with the solution chosen. But usually, each party has a new position which is different from the previous, and also different from the common solution. This situation feeds automatically the decision making cycle whilst expressing new needs for changes.

In the negotiation procedures, the distribution of power may be considered as more important than the participation itself, because the challenge of such a process is often a re-distribution of roles, and of power among the participants.

5. METHODS AND TECHNIQUES FOR NEGOTIATION USED FOR SOLVING FORESTRY CONFLICTS

The exercise of conflict resolution needs to be a rigorous one. There are various methods for this purpose, which all have their advantages and disadvantages.

A first group of methods is devoted to promoting co-operation among actors, and mainly focuses on an analysis of possible common points of agreement on the present situation, even if defined from different viewpoints. All these various approaches are particularly adapted to a type of administrative planning valorising common strong points in the present situation from the public authority viewpoint.

(i) The “collaborative learning” method: The collaborative learning method aims at establishing a so-called “consensus” through participation. A basic issue is that public opinion is not a mere aggregate of separate individual judgements, but a co-operative product which is different from the sum of the individuals opinions. As the representative from the public authority, the (forestry) administration is socially in charge of establishing this product. This approach is very much used for planning formulation by regional and local forest services when they have to propose or to make decisions which need to be legitimated by a sufficient stakeholders’ participation. It consists of promoting an open discussion through asking everybody to express their own opinion on the principles, analysis of the present situation, needs for changes, and new objectives and means.

Theoretically, open decision-making gives all participants full access to the information and the opportunity to participate in the dialogue on the resolution of issues. Public enquiries are the main technique for collecting additional information from people. It can be completed by workshops where the participants discuss this information, acting as advisory committees. This method has been used by the regional and local forest services confronted to decide on the compatibility between production and protection of special forest areas, because it could make clear how the decision was reached. It can be particularly successful in cases where the interest groups are not much

represented or concerned. In policy formulation, it is very much employed when the main objective of the public authority is to restrict the participatory process to an information box. It is theoretically and practically impossible to draw decisions for a compromise using such a method.

(ii) The “mutual gains” method. The two basic hypothesis justifying this method consist of considering that co-operation among actors is the only way to reach a compromise, and that only gains (or benefits) are additive; the best solution for the community will be the situation when the sum of the individual gains is the most important. In this approach, the participants are invited to consider what they can effectively gain from the implementation of a possible alternative compromising (or not compromising) solutions proposed by the administration.

On the basis of positions expressed in a participatory way and discussed in workshops, the facilitator submits to the representatives some alternative decisions which can bring a compromise, and asks each of the participants to consider the benefits drawn from the related solutions. The final solution is that on which most of the participants draw benefits. This method is successful when the problems to solve are very concrete ones (especially at the local level) and when the related needs for changes are not all expressed by formal interest groups (as for the role of forest in rural development). The constraints and limits are numerous:

- a) first, it may lead to a very directive management of workshops by the facilitators (especially when they come from administrative structures), who are in an easy position to give the answers instead of asking the participants; and
- b) this approach is not relevant as soon as the problems to be discussed concern public goods and services (externalities, abstract or ethic, anyway unappreciable gains) which is the case in forestry, especially concerning the environmental benefits.

The method is sometimes used to explain to the participants – considered as passive – the benefits which can be drawn by the community if retaining a solution previously conceived by the public authority solution and proposed for discussion through the workshops.

(iii) The “community of interests” method: This method is derived from the interest-driven approach, in which the participants are supposed to be motivated only by their interests. An expert study, based on the enquiries of the main representatives from the interest groups, is firstly conducted, and the interests are clarified and expressed in a comprehensively and systematically. Then, the workshops identify the common interests from the various positions, and the strategic lines for policy and planning are defined only on the basis of these common interests. This method is rather easy to conduct, but it has some limitations:

- a) first, most of the analysis is made by the experts on the basis of a typology of interests which is generally based on principles – not on real positions – and subjectivist viewpoints, where the facilitator may play a direct active role in defining the related interests; and

- b) participation in such a procedure is conceived in a way which can restrict the concrete role of stakeholders, so that the level of acceptability of the related interest groups is not guaranteed (because the negotiation is based on principles and not on facts and real positions).

As it theoretically makes the conflict resolution clearer in any situation, the community of interests method can be employed by the public authority – and it is effectively often used – without any previous concept for participatory process, especially for treating questions where only interest groups are concerned and where the forest service is for a short term decision. Although it is established for facilitating a consensus, this approach may be a very directive one.

An other group of negotiation methods is related on the necessity to treat disputable issues, and tend to create a debate made with opposite arguments. These approaches consider only problems, and are particularly adapted to a kind of “democratic” planning focusing at treating needs for changes expressed by stakeholders.

(iv) The “environmental mediation” method: In the environmental mediation approach, the solution consists of making people negotiate a long term perspective on which everybody needs to agree and which is officially approved by the authority as the goal of the forest planning. All the disputable items related to the different possible scenarios for the future are discussed by the various participants, but at a very abstract way. The discussion in workshops of several possible scenarios includes the following topics:

- a) the future expected situation for forestry from different viewpoints;
- b) the related incidences on the way the forest is managed; and
- c) the related incidences on the way the decisions are to be taken (empowerment of some participants or non-participants).

The negotiation does not take into consideration the present problems, at least theoretically, and concerns only a common vision of all participants on what can be the best expected result. By principle, the solution retained as a conclusion of the negotiation procedure is not directly related to the present problems, but based on a prospective (and not prevision) viewpoint. The limits of this procedure are the following:

- a) there is a frequent mixture between the present and future (participants being generally interested in discussing the real problems they meet) which restricts the rigour of the process; and
- b) as very abstract and general social topics are discussed, the role of the experts in facilitating the discussion is essential, and may lead to solutions very different from the present situation.

(v) The “4 R” method. The role of each actor in the decision making process is defined by its “4 Rs” (rights, responsibilities, revenues, relations). For each interest group, a sociologist analysis is first conducted with as an objective to evaluate the level of coherence of the system of link between the “4 Rs”, and to treat all the points where an incoherence is seen. It is an objective method, which tends to identify comprehensive

problems, but it is not based on the representatives' expression, at least not in the beginning of the process. It can be used in the case of unexpressed positions or the absence of formal representation of the local groups.

The "4 R" method gives a particular importance to monetary benefits as an outcome of the exercise of rights and responsibilities for all actors. By this way, it may minimise the symbolic and qualitative aspects of forest appropriation. A central hypothesis of the method is to consider that the co-operation among the actors only comes from a balance (compromise) in power among them. By this way, the "4 R" method considers all kind of situations where this balance is missing as conflicts, and leads to a situation of competition (dependence or domination) or disengagement (escape or passive objective agreement). This concept of balance is finally a very subjective one, and it can finally give the public authority a central role in ordering the solution.

(vi) The "constructive confrontation" method. This method consists of listing and treating all the various disputable issues expressed by the participants to the process separately. The hypothesis is that for determining the solution the divergences are more important in a negotiation than common positions. The discussion is based on the analysis and positions expressed by the participants on the concrete present situation. The stakeholders firstly present their views, then discuss them in common meetings with the other participants, and finally negotiate a compromise on each of them. Every item expressed by the participants is classified into a typology distinguishing the positions which are commonly considered as always compatible, from those which are supposed to be compatible under certain conditions and the incompatible ones.

Some framework conditions are generally established by common acceptance at the beginning of the exercise. A rigorous rule is required for moderating, and the technique of cards on boards is systematically used in order to guarantee the expression from everybody. In this framework, the issues expressed which are not disputed in meetings are considered as admitted as a possible solution by the community of participants, independently from their coherence with others (including disputable ones).

Incompatible positions are generally excluded from the discussion. In cases where all the participants agree with the public authority on the need for changes, the constructive confrontation approach can bring relevant results, because it concretely deals with the problems to solve. The limits in such a procedure are the following:

- a) in the case of various disputable topics, the negotiation is characterised by an important transaction cost (in money, in energy, in time); and
- b) the negotiation of each topic separately from the other ones does not automatically guarantee the coherence of the final solution with other decisions resulting from other compromises into the discussion.

6. THE CONSTRUCTIVE CONFRONTATION TO DEFINE A MULTIFUNCTIONAL FORESTRY MANAGEMENT

The “constructive confrontation” method has been implemented in some cases for strategic planning at the regional and national level, in order to re-define policies and programmes promoting a multiple-use management of forests.

Based on this experience, this method has proved some advantages compared to the other methods. First, it gives the possibility to identify all the related issues, from all participants, which is important in forestry field considering the number of uses and corresponding users. It is based on realities and not only on principles or hypothesis about what are the stakeholders’ interest and behaviour. Second, it is the only way to analyse the link between different and opposite uses and users. The concrete involvement of representatives in the discussion is indeed the only mean to have a concrete idea of the present balance in power among the main actors in the forestry field. Theoretically, it is the only way to draw from the discussion a comprehensive view leading to a compromise. This is well adapted in the case of forestry where users are numerous, especially when the objective is to promote through strategic planning a multi-purpose forest management. Finally, it does not create problems in cases where they do not exist, as it can be the case with a sociologist analysis (as for the “4 R” method). The constructive confrontation treats only existing problems. It even helps in identifying and clarifying these problems when they are hidden.

But in order to be effective, this method has to be conducted respecting some technical conditions and constraints, which need to be specified. All the social needs have to be expressed through the discussion, even those which are not represented by the existing interest groups. A study aiming to identify all the present uses and users, with a typology of these based on the logic of the access to forest resources, is needed at the beginning of the procedure. The same rigorous sequence for debating the disputable questions has to be followed for each of the topics brought into the discussion. The discussion has to be conducted by beginning on the more global topics and continuing on the more precise or special ones. After every partial compromise, a rapid discussion is needed to verify the coherence with the former established compromises. It is the only technique for assuming that the global compromise will be a sum of several more detailed and specific compromises. A strong and clear engagement of every participant (including the public authority considering the implementation of the solutions drawn from the negotiation) is needed at the beginning of the process. Framework conditions (such as some common pre-defined goals or constitutional restrictions) have to be defined and accepted by all participants. Material aspects of the procedure (responsibilities, timing agenda, status and role of moderators, etc.) have to be discussed and adopted in a participatory way, before engaging the process concretely. An official commission in charge of supervising and validating the process has to be established by the public authority (government if national level).

7. THE NEED FOR RECIPROCAL INFORMATION

As it refers to the theory of communicative action, communication obviously takes a central place in the procedure of negotiation. Expressing and discussing positions, participants to the process give information to the others (about what they think, what they want, what to be changed, etc.). The process of negotiation can be considered as a system of information, linking the participants as elements of a communicative network.

For a good work of the negotiation procedure, some requirements considering information flow need to be satisfied.

(i) Need for a common language. It is impossible to find a common position, necessarily different from each of the expressed positions or proposals, which could use the same language. Concepts and principles are important, and need to be discussed at the beginning of the process of negotiation. As they are rather abstract, there can be misunderstandings during the discussion. The time spent in order to clarify and select common words and assertions is never lost. The role of the facilitators in establishing a common language in a participatory way is essential for the quality of the procedure.

(ii) Need for an expressed right for each participant to use, to give and to control the information useful for the procedure. In order to have the result admitted by each participants, they have to be placed in the same position considering information. Especially the access to information must be facilitated to each participant. A real right to information has to be stated at the beginning of the process and respected afterwards. This is not evident because the administration has a different role in the process than the other participants. The public services are in charge of producing information (through enquiries, statistics, etc.) and also are in a special position considering decision-making. But the quality of the result directly depends from this factor.

In a participatory process with many participants, a variety of information exists depending on stakeholders. As the fields of interest are different, as the places of elaboration of information are different, as the objectives of information are also different, all the information is not comparable. For instance, speaking about economic topics, various participants will retain different facts and figures (macro-economy for public authority, micro-economy for private producers, social effect of economy for local users and politicians). The only relevant information is information to be discussed in a reciprocal way. As information is defined through and by the participatory process itself, it can be considered as both an input and an output of the negotiation procedure.

A free and complete information is a utopia. Retaining information is a usual behaviour because participants may lose some influence on the negotiation through giving information to the other actors. This can be, for instance, the case of administration, especially when changes in the public structure are formally required at the beginning of the process. But it can also be the case for privates, who are not interested in giving precise information on their benefits, especially when a new system of incentives and control is being studied (taxes based on results). Sometimes it is the strategy of some participants to give only information which concerns the other interests. Gathering information is one of the strongest problem in negotiation processes, because mastering information is an important challenge for any participant.

At this point, the role of an independent facilitator is essential. It may lead to consider the absence of information as information. In most of the cases, this means the need for an expert study of the issues which are discussed, providing the negotiation process with external “neutral” information to be discussed among the participants.

8. THE INSTITUTIONALISATION OF THE NEGOTIATION PROCESS

Due to the importance of negotiation in forest policy and planning decision making, it can be useful to base the follow-up and evaluation of forest programmes on official (permanent or occasional) participatory procedures. Several formulas exist for this purpose.

(i) Evaluation missions. Expertise by the public authority (usually national forest service) with a procedure of consultation of stakeholders: this solution is generally restricted to structured and influent interest groups. It is usually conducted in an informal and non-transparent way, or restricted to inspection missions making technical managerial evaluations. Participation is often used here as an alibi. Counter-expertise on the same issue: this is a more sophisticated and participatory procedure which is conducted in special cases of a: specific, urgent and difficult problem concerning few stakeholders (optimum: one stakeholder + administrative service), when a very conflicting analysis of the situation makes a choice by the administration itself impossible. This generally occurs when there are conflicts among various administrative services, or while solving local conflicts between environmental and productivist considerations and interests.

(ii) Occasional advisory committees. Creation of a special commission in charge of proposing solutions for solving a problem in forest policy and planning implementation. It may be a general one (for a mid-term evaluation of a forestry national or regional plan, or a rural development programme including forestry, or a natural resources master plan including some forestry issues), or specific to a particular problem. It generally ends with the report to the public authority. Occasional advisory committees may be used as special tools for decreasing conflicts using time and discussions. In case the public authority is not willing to discuss an issue which is very difficult to solve or which is not considered as a problem by the administrative structures, this is a mean for not really answering the question.

(iii) Permanent advisory boards of administrative structures. Permanent administrative institution directed by a board including representatives from selected or all kind of stakeholders means an engagement from the public authority to take decisions establishing compromises through negotiation with stakeholders in a participatory way. Various systems can exist:

- a) Consultative administration: the boards give advises to the State or to the regional authority which is the only structure able to take formal decisions. This is the general case when existing at the national level.

- b) Collaborative management: the boards can take decisions which are implemented by the administration (usually at the majority with a *veto* from the State representatives). This guarantees that the stakeholders' positions are taken into consideration into the final decision. This system is more frequent at the regional and local levels.
- c) Co-management: at various levels, the stakeholders participating into the decision structures are in charge, together with the administrative services, of the implementation and follow-up of the planning decisions. It is a kind of neo-corporatism. This system is very rare, restricted to some local cases.

Considering the future of forest policy and planning processes, the challenges are enormous. Some very important questions, such as the coherence of public decision making in citizen and private interests fields, or the link between environmental and productivist viewpoints in forestry fields, need to be answered. Considering the various types of needs, interests, positions, representations and activities, and the differences in scales, fields of action and places where to bring the demands, it is not sure that a unique approach is to be selected. Several participatory principles, methods and techniques to be implemented simultaneously for negotiation, may be useful for taking such a diversity into consideration. Rigorous applied researches at the regional and national levels are needed to find comprehensive approaches based on a coherent set of methods and techniques adapted to every situation.

Currently, some participatory procedures have been conducted for formulation only, and they generally concern more the identification of policy means than the definition of planning objectives. A present urgent issue is to have the negotiation principle applied also for the follow-up and the evaluation of these programmes. As the finality of a strategic planning is to be implemented, there is a need for maintaining the same logic for a continuity of the policy cycle. Planning without follow-up and evaluation means nothing from the participatory viewpoint.

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FIVE ANALYTICAL FRAMEWORKS FOR ANALYSING PUBLIC PARTICIPATION

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ABSTRACT

Public participation is increasingly becoming an integral part of contemporary forest policies in European countries, and is considered a necessary part of regional forest strategies. Nevertheless, public participation is still a relatively new issue in European forest policy research. So far, few studies have investigated the goals and means of public participation in a European forestry context and what public participation actually implies. In this paper, five different analytical frameworks by which to understand and evaluate public participation are outlined. Each of the perspectives provides potential for valuable, new knowledge on the nature of participation. Presented together, they stress the need for researchers to deliberately outline the ideological convictions underlying each research design.

Keywords: forest policy, democracy, power, efficiency, regulation

1. INTRODUCTION

Public participation is becoming an integral part of the global forest policy discussions. The UN Forest Declaration stated that ‘governments should promote and provide opportunities for the participation of interested parties, including local communities and indigenous peoples, industries, labour, non-governmental organisations and individuals, forest dwellers and women, in the development, implementation and planning of national forest policies’ (UNCED 1992, p. 2). Similar statements can be found in Agenda 21, Chapter 11 about combating deforestation, in the Intergovernmental Panel on Forests’ proposals and, most recently, in the European Lisbon resolution on People, Forests and Forestry as well as the European Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

There is clearly a positive political attitude towards public participation in forestry. There is also major uncertainty and disagreement as to what participation actually implies and how it should be studied. Whereas there is a long tradition for practising and doing research on public participation in forest and natural resources decision-making in the U.S. (for an overview see, e.g. Lawrence and Daniels 1996), experience is still relatively sparse in Europe (Solberg and Miina 1997).

Broadly, research on participation can be divided into research on participatory planning (e.g. Kangas et al. 1996; Loikkanen et al. 1999) or research on participation in planning. Research approaches can be inductive, trying to conceptualise participation, based on empirical observations (e.g. Jakobsen 1998; Tuler and Webler 1999), or research can be deductive in terms of hypothesis-testing particular theories applicable to participation (e.g. Moote et al. 1997; Renn et al. 1995; Sköllerhorn 1998; Pelletier et al. 1999). Eventually the research approach can be a combination of both.

The aim of this paper is to provide a brief overview of those various theories or analytical frameworks that have been applied in recent research on participation in environmental decision-making as well as in other sectors of society. The outline of these theories reveals that some of them are fundamentally opposed to each other due to different basic assumptions about, e.g. the nature of interests, whether consensus is an opportunity or not, the relationship between state and individual etc. Consequently, participation cannot be understood as an objective phenomena to study or grow such as 'a forest' or 'a tree'. Participation is what the analytical framework puts into it or takes out of it.

The paper proceeds as follows. First some observations about public participation and forest policy decision structures are resumed. It is demonstrated that public participation could be understood as interactions in a network of actors, rather than as participatory planning processes in relation to a bureaucratic management system. Second five theoretical perspectives that may be applied to study public participation as interactions in a network of actors are compared, namely:

- a) power perspective;
- b) democracy perspective;
- c) efficiency perspective
- d) empowerment perspective; and
- e) regulation perspective.

Third the five perspectives are shortly resumed in order to provide prospects for future research.

2. CONCEPTUALISING PUBLIC PARTICIPATION IN A FOREST POLICY CONTEXT

The Forest Declaration statement above points towards 'institutionalised participation', where a decision-maker deliberately involves other actors in the decision-making process, and power is more or less delegated from the decision-maker to the public. Accordingly, the actual model of public participation may range from one-way communication, exchange of ideas, hearings and consultations, shared decision authority, and towards actual citizen control.

This characterisation of participation assumes an unambiguous, predefined decision-making structure that not may not always be present. It implicitly assumes a bureaucratic management system, where an identified decision maker controls decisions and tries to open up for controlled influence. However, 'institutionalised participation' does not include bottom-up initiatives as intended with, e.g. Agenda 21. Further, institutionalised participation does not recognise the possible significance of informal interaction between actors. One could even argue that the mere idea of participatory planning, e.g. in relation to a forest management plan, a regional forest programme or a national forest programme, excludes any bottom-up approach, as bottom-up also assumes some predefined decision structure to be opposed to.

Studies of public participation in Nordic forestry showed that the decision process of forest owners does not fit into the rational planning process, such as is assumed in 'participatory planning' (Boon 1998; Boon et al. 1998). In fact, the different actors had various ways to influence forest policy planning, including formal and informal interaction between the actor and forest owner/planner as well as between actors at local, regional or national level. For example, institutionalised participation regarding nature conservation would assume negotiations between the local nature conservation organisations and forest owners. However, the local nature conservation groups may also have possible influences legitimated by law, such as the right of the Danish Nature Conservation Association, to raise cases on nature protection. In addition, nature conservation issues may be incorporated in forest management practices through the pressure of nature conservation interest groups on the national forest organisations, which in turn may pass new practices on to the local forest owners through education and information campaigns, such as 'Levende Skog' and 'Rikare Skog'.

The studies of public participation in Nordic forestry also showed that not only forest owners/managers and the 'public' negotiate conflicting interests that might be relevant for forest management decisions. Negotiations also appear within such organisations as, the national forest agencies or the nature conservation associations at different geographical levels. A definition of public participation should be revised in order to capture these patterns of interests and their negotiations.

Thus, different actors may influence forest management in several formal and informal ways. Consequently, public participation could be understood in relation to the interactions within a network of different interest groups or actors, rather than as part of a rational process in a bureaucratic system. In addition, this network of different actors has a mutual responsibility of managing natural resources in a way that meets the current and future needs and demands of society. As a result, 'participation' should be conceptualised in a way that captures the dynamics of forestry, that is, the interaction on the borderline of what is considered as the 'forest sector' and what is considered as 'society in general', between those considered 'outside' and those considered 'inside' forestry, between those considered decision-makers and those considered participants, and between actors and structure.

3. FIVE THEORETICAL PERSPECTIVES ON PUBLIC PARTICIPATION

In this section, five perspectives that might be used as a theoretical framework for better understanding and analysing public participation are discussed and compared, namely:

- a) a power perspective;
- b) a democracy perspective;
- c) an organisational efficiency perspective;
- d) an empowerment perspective; and
- e) a functional perspective.

3.1 Power perspective

According to Arnstein (1969, p. 216), (citizen) participation is '*a categorical term for citizen power. It is the redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future*'. Arnstein suggests a normative 'ladder' typology of participation that describes the level of power redistribution. Rungs 1 (manipulation) and 2 (therapy) of the ladder are both non-participation levels, substituting genuine participation. Actions are aimed to enable the power holders to 'educate' or 'cure' the participants. Rungs 3 (informing), 4 (consultation) and 5 (placation) bear the opportunity that participants may hear and be heard, but without having the power to make sure that their views will be incorporated in the decision-making process. At Rung 6 (partnership), power is actually redistributed as decision-making and planning responsibilities are shared, such as in boards with decision power. At Rung 7 (delegated power), the participant power may be dominant, such as having the majority in a governing board. At Rung 8 (citizen control), the participants take over control of public property.

Arnstein's power perspective is well in line with Verba and Nie (1972), who define participation as activities that directly or indirectly are aimed at influencing the political authorities. This means, that public participation is not just having an opinion, an attitude or a belief, it also requires influencing. Likewise, Potter and Norville (1983) state that public participation can be viewed as the participation of any person in a purposeful activity directed at a governmental decision-maker with the intention of influencing his/her decision or action.

However, as suggested by Andersen et al. (1993), participation may not always be directed at the political authorities and may not always be a matter of influence. Understanding participation as influencing public authorities is linked to an instrumental perception of politics, that is, where interests are assumed to be exogenous and where politics is merely an arena for negotiating these predefined interests. Alternatively, from an institutional perspective, a political process involves the modification of interests and the possible emergence of new interests. Thus, politics can be considered not only as goal-oriented action towards taking care of interests, but also as communicative action oriented towards mutual understanding, common expectations and binding, normative principles. Consequently, participation can be defined as '*activities that affect formulation, adoption and implementation of public policies and/or that affect the formation of political communities in relation to issues or institutions of public interest*'

(Andersen et al. 1993). Moreover, Andersen et al. (1993, p.32) suggest that participation also has communicative objectives and a political learning effect (e.g. Kristensen 1998), as far as participation teaches the participants to become better capable of understanding and taking a position towards political issues.

Whereas Andersen et al. (1993) demonstrate that participation is about more than power, one could argue that it is *all* about power, but various forms of power beyond those discussed by, e.g. Arnstein (1969).

Power can be said to have four dimensions (Christensen and Jensen 1986), where the three first fit with Arnstein's ladder:

- a) Direct power, exercised directly in the particular decision process in terms of access to process, access to put issues on the agenda, decision competence, budget authority, possess relevant knowledge etc.
- b) Indirect power exercised, e.g. by public officials by 'filtering' what issues are allowed to enter the decision arena, being considered 'irrelevant', or considered too resource demanding to pick up, as well as filtering what decisions are actually being implemented afterwards. Ambiguous decisions as well as use of framework decisions typically enhance this indirect power of those to implement the decision.
- c) Consciousness controlling power, assuming that power can be exerted in the hidden, manipulating people's objective (or at least 'reflected') interests into some other, perceived interests that correspond with the interests of the manipulator. This can be done by use of authority, manipulation or collective pressure/influence.
- d) Structural power, as the routines, norms, institutional settings impose power on all actors as they regulate behaviour while simultaneously unreflected being produced and reproduced by that same behaviour.

It can be argued that you cannot escape this 'institutional prison', as anything you do is a result of, or is reflected by, the institutional setting. In simple terms: 'you are a product of your surroundings'. Recent sociologists, as e.g. Giddens (1991) have tried to overcome this dichotomy between an actor's versus a structure perspective to power. Modern society implies ever changing premises for action, and individuals face multiple roles in relation to all the different institutional settings they pass every day, as parents, as employees, as consumers, as members of various organisations or religion societies etc. Consequently, the individual is constantly forced to reflect on his/her particular situation in society – 'what setting am I in', 'what are the rules of game here', 'how am I expected to act?'. A sense of self-reflexivity (reflection on being reflective) evolves that questions the given institutional framework, and exactly that reflexivity can be said to create the link between actors/agency and structures. Consequently, when Andersen et al. (1993) talk about the political learning effect of participation, this may be seen as a strategy to empower the powerless, not necessarily by taking away power from others, as implied in Arnstein's idea of power redistribution, but by increasing the absolute amount of power. On the other hand, once you start debating the structure, once you start argue for changing existing norms, values and structure, power redistribution is likely to take place. In this sense, the ideas of reaching mutual understanding through communication, Habermas' theory of communicative action, can be argued to be a strategy for a more civilised form of power struggle.

Finally, Christensen and Jensen (1986) suggest that in decision-making processes in loosely coupled systems of a garbage can character (as opposed to rational decision-making structures), other participatory strategies are important than for the traditional four dimensions. Where there is a flow of decision opportunities, solutions, problems and participants, power becomes a question of:

- a) keeping on, decisions rejected today are made tomorrow;
- b) let others get the honour as long as you get it your way;
- c) overload the system in order to have something to bargain with; and
- d) create many decision opportunities.

This view of power has substantial potential in explaining some of current forest policies and premises for participation, particularly in so far as forests are considered unambiguous goods to society, no matter the setting. Current Danish afforestation politics at the national level seems to be a good example, where an arbitrary goal of doubling the forest area has been forwarded by shifting means, in shifting arenas and with shifting argumentation, but always with 'more forests' as being the solution to any problem, be it groundwater protection, recreation, or excessive agricultural production.

Implications for research: Analyse the relationship between different forms of participation and redistribution/transforming effects of the various forms of power. Use different methodologies according to the different forms of power: from direct power analysis to discourse analysis.

3.2 The empowerment perspective

Empowerment means – through deliberation – to enable lay people to participate in policy forums where the more competent and skilled actors have already positioned themselves. The objective of empowerment is to spread and extend the influence of lay people into new areas and to enhance their control with the social and political spheres that affect them (Korten and Klaus 1984). The empowerment perspective does not understand participation as the endeavour to reach aggregate compromises of individual, conflicting interests. This means that participation is not only an arena for negotiating conflicting interests, but also, or rather, a forum where common values are shaped and transformed through simultaneous (political) learning (Macpherson 1977).

The idea of empowering the participants is to give them the feeling that they can make a difference and that they have a say. This way, they may become more committed. Thus, the empowerment perspective focuses on the issues that could motivate the participants to become active political participants. This process may be analysed and divided into four stages, as suggested by Andersen et al. (1997).

The first stage concerns the participants' understanding of policy and democracy, which depends on their discursive world view. This can be analysed by asking questions such as 'what are the participants' democratic ideals', 'what basic ideology do they bear (e.g. individualism or collectivism)', and 'what is their understanding of communication'.

The second stage concerns the participants' will or desire to act politically, which may depend on the identity, interests and goals of the participating individuals and communities. The motives for political action may include fighting for interests, moral obligation, legal obligation or social desire.

The third stage concerns the resources and capacity to participate. The ability to be politically active depends on the resources and capacity of the participant relative to the demands of the decision process. This ability may depend on a range of factors, including:

- Does the individual have access to the decision process?
- Does the participant have sufficient communicative skills?
- Does the participant have sufficient technical knowledge?
- Does the participant understand the 'rules of the game' in decision-making (e.g. how to co-operate, how to establish confidence, and how to exploit a bargaining position)?
- Does the participant have a political network with other influential persons and institutions?
- Does the participant have financial resources for bargaining?
- Does the participant have the necessary time and money to participate?

The fourth stages concerns agency, which depends on individual and collective obligations and incentives. Such incentives might include influence, handling of interests, knowledge, the feeling of belonging and identity. Obligations might include the obligatory participation of organisations in councils and boards or legal obligations of citizens to participate (Andersen et al. 1997).

Implications for research: Studies to analyse the relationship between different forms of participation in forest management and how/if it affects participants in relation to the assumed different stages of empowerment and political learning.

3.3 The democracy perspective

Public participation in forest management is often associated with strengthening democracy. The basic meaning of democracy is 'rule by the people', however, in reality democracy is understood in different ways. As a result, the interpretation and evaluation of public participation varies according to the democratic principles that are applied. In order to understand the democratic perspective, it is useful to distinguish between the *substance of democracy* and the *democratic procedure*.

Substance of democracy. The substance of democracy concerns the understanding of people's interests, the type of regulation, legitimacy and the role of participation. The *aggregative* viewpoint of the substance of democracy assumes that the interests of the people are predefined and exogenous to the political process. Thus, democracy is primarily an institutional arrangement to negotiate conflicting, individual interests (as suggested by Schumpeter 1943). Adding to this some basic individual rights, protecting

the individual from the state equals the liberal tradition (Mill 1967). The aggregative viewpoint also assumes that goal formulation (input) and regulation (output) are separable. Consequently, regulation should be a result of rational exchange between individuals, majority rule and bureaucratic implementation of decisions made by elected leaders. The success criterion of regulation is an efficient and optimal distribution of scarce goods. The legitimacy of political systems is created through the existence of a set of procedures regulating the competition for votes between political elites (Sørensen 1995).

The *integrative* viewpoint (Republican tradition), on the other hand, rejects that people's interests are predefined. Instead, it assumes that the substance of democracy concerns the modification of people's interests and the emergence of new, common interests and understandings through dialogue. Democracy becomes a way of life. Within this position, there are different interpretations:

- a) *The communitarian perspective* (e.g. Barber 1984; Etzioni 1995) assumes a common good, based on certain substantial interests, moral motivations and values, e.g. striving for a just society.
- b) *The participatory approaches* (e.g. Pateman 1970; Macpherson 1977; Arendt 1958) regard participation as having a value in itself, as a precondition to democracy, stimulating political learning and sense of political efficacy by which individuals can better enhance own interests (Pateman) or realise individual autonomy (Arendt) (Kristensen 1998).
- c) *The discourse-democratic perspective* regards a common good as such being incompatible with a pluralistic society. Rather, it focuses on a common political identity, a political community based on agreed, common democratic principles and procedures for dialogue (Habermas 1984; Kristensen 1998).

Furthermore, the integrative perspective assumes that goal formulation and regulation cannot be separated, and so cannot the regulator and the regulated. Rather, it should be a dynamic, two-way process of influence and dialogue between citizens and society, and the criteria of successful regulation is the ability to solve defined problems. Legitimacy of the political systems is achieved when citizens regard themselves as being an integral part of the community, so that they actively support the norms and values constituting society (Sørensen 1995). Consequently, participation becomes essential to create and maintain legitimacy of the political system. Note that the three interpretations of the integrative perspective have a common understanding of regulation and legitimacy, but different interpretation of the people's interest, and, consequently of the scope of participation.

Democratic procedure. Ideals of democratic procedure vary as well, from direct democracy, over strong popular control of representatives, to substantial delegation of decision-making competence to elected representatives.

Direct democracy has been criticised for leading to totalitarianism, in so far as

- a) individuals become transformed to full-time “citizens” being full time engaged in public decision-making;
- b) all activities should be based on consensus leaving only little/no room for individual choice;
- c) full participation in all decisions would make efficient governance impossible (Sørensen 1995).

The alternative is democracy based on either mandate or delegate representation:

Mandate representation. Representatives are granted very limited autonomy, as they are elected to advocate the viewpoints of the people who elected them. This ensures strong, popular control but may counteract holistic governance.

Delegate representation. When people elect representatives they also agree to delegate substantial decision-making competence to the representatives, who are then free to make decisions based on their own judgement. This relative independence of the representatives is conceived to enhance a more holistic attitude towards governance, as the representatives are not tied up to defending the particular interests of those who elected them, as is the case by mandate representation. Rather, the representatives are expected to govern in the general interest of society as a whole. However, the aim of enhancing regulatory efficiency and a belief in professional solutions to political problems may tend to take over and advance dictatorship, either in form of technocracy or ever growing, centralised political leadership. Also, it is feared that delegate representation leads to uninformed decisions, as politicians are assumed to lose contact with those being involved and affected by the decisions and, hence, not get the necessary information (Sørensen 1995).

Obviously, the role of public participation varies according to the type of representation. In case of direct democracy, active participation becomes the core of democracy. In the case of a mandate representation, participation is also essential from an integrative perspective (Pateman 1970), whereas from an aggregative perspective (Mill 1967) it is only necessary in so far as it strengthens individuals’ chances of promoting their own interests. In the case of delegate representation, public participation may be considered necessary to mitigate uninformed decision-making and technocracy, and, from an integration perspective, it is also essential in order to create and maintain legitimacy of actions.

Only few studies have explicitly used the democratic theories as a foundation for research on public participation in natural resources management. Among these are Moote et al. (1997) considering the implications of participatory democracy for public land planning, Renn et al. (1995) and Sköllerhorn (1998) using Habermas’ theory of communicative action to, respectively, develop a model for evaluating public participation and to study environmental policy, and Pelletier et al. (1999) testing the effects of deliberative democracy principles on participants viewpoints on the local food system before and after engagement in a participatory process.

Implications for research: Studies to analyse the relationship between actual participation and the various interpretations of democracy in the different European countries. Studies to evaluate the effects of applying particular democratic principles to a participatory process in terms of the desired outcomes (negotiation of interests or new common interests, shaping of values, political learning, deliberation etc.)

3.4 The efficiency perspective

When public participation is evaluated one needs to know what are the criteria of success. Whereas there may be agreement on the need for participation, there is most likely disagreement as to what is actually the goal of participation and how that goal can be measured. From a manager's perspective, it is interesting how public participation can be used to optimise forest management. As noticed by Lund (1997) this has been a vital part of the discourse forwarding participatory developing projects in the Third World, uncritically assuming a positive correlation between level of participation and successful development. Such assumptions should be challenged, also in relation to current European forest policies forwarding participatory regional forest strategies. Rather, there is likely to be a trade off between the project success in terms of outcome and in terms of a democratic process, as e.g. investigated for performance of school boards by Sørensen (1991). It can be argued that efficiency of forest management can be measured both in terms of

- a) the outcome (goods and benefits),
- b) the related ecological, technological, social, and organisational processes (e.g. habitat disturbance, machinery failure, participation, working injuries), as well as
- c) the structures determining forest management (e.g. professional skills, level of technology, financial resources, knowledge, vertical co-ordination with nursery or wood industries) (Boon and Helles 1999).

In addition, that there is no 'one best way' to ensure sustainable forestry. This means that the participants or actors in a network related to forest management may likely disagree on the output of forest management, but also on the appropriate processes and structures to rely on. This basically implies that the end-means rationality is not sufficient when planning for sustainable forest management. Consequently, we need to broaden our definition of efficiency from conventional instrumental efficiency to also include institutional efficiency, based on value rationality (Jørgensen and Melander 1992). Survival of the organisation (or, broader, the forest sector) may then become a value in itself, and where legitimacy is the keyword in relation to the surrounding society.

Following the presented line of thought, output is not only: 'are we producing the right amount and quality', but: 'are we producing the right things?' Similarly, processes are not only 'having an optimal process in relation to producing output', but 'using acceptable processes, based on acceptable values'. Finally, structures are not only 'having optimal structures, considering our surroundings and the aimed output', but 'are our structures based on acceptable norms and values?' (Boon and Helles 1999). Table 1

provides an overview of different forms of forest management efficiency. If we want to evaluate how participation affects forest management efficiency, we could relate it to each of these forms of efficiency.

From the instrumental efficiency perspective, public participation in forest management is

- a) a means to reach an optimal output of goods and services, e.g. by use of preference surveys;
- b) a means to avoid resource demanding conflicts; and
- c) a way of acquiring (local) knowledge on the forest area or volunteer assistance in daily work, all in order to have an optimal output of forest goods and benefits.

From the institutional efficiency perspective, public participation in forest management planning (4) serves to provide a legitimate and maybe optimal output of goods and benefits; (5) can be a means to reach legitimate processes (e.g. discussing whether the use of pesticides, and size of clear-cuts, etc. is acceptable); (6) becomes an end in itself, when participatory structures provide legitimacy to society.

Stepping out of the managers perspective we may want to know, not the effect of participation on forest management efficiency, but the efficiency of the participation process as such (Chess and Purcell 1999). In a sense, it is included in the forest management efficiency perspective, as far as it is part of an *optimal/legitimate forest management process*. However, in order not to blur the picture, it should be mentioned separately. Efficiency of the participation process would focus on issues like representativity, fairness, information exchange, group process and procedures for communication (Chess and Purcell 1999). Research on this topic within environmental politics is new, but rapidly growing (e.g. Tuler and Webler 1999; Renn et al. 1995; Renn 1999; Burkardt et al. 1998; Sköllerhorn 1998).

Table 1. Forest management efficiency.

	Instrumental efficiency	Institutional efficiency (historical, legal, political legitimacy)
Output	<i>optimal output</i> The six Helsinki criteria: wood, economy, recreation, biodiversity, groundwater, soil erosion, landscape aesthetics	<i>legitimate output</i> Marketable goods legitimated via market Immaterial goods required through law/rules, egitimated via pp/discourse
Process	<i>optimal process</i> Efficient use of time, money, labour, knowledge (including local), minimise failures and conflicts in order to have optimal output reach consensus/compromise	<i>legitimate process</i> Legitimacy of using pesticides, ploughing afforestation areas, work injuries,.. representative in relation to own organisation, to 'public', to law, transparency
Structure	<i>optimal structure</i> Efficient organisation structure in relation to exogenous factors and aimed output. The right amount/quality of capital, knowledge, skills, technology, etc.	<i>legitimate structure</i> Using the right technology, the right knowledge, the right values, the right capital, having right ownership, right interpretation of law, right certification

Implications for research: From this point of view, research will focus on analysing the perceived relationship between participation and the different dimensions of efficiency.

3.5 The regulation perspective – how to implement a mode of behaviour?

The regulation perspective focuses on how to implement a particular mode of behaviour and how to make a legitimate regulation. As discussed for efficiency above, one can distinguish between an instrumental and an institutional perspective to forest management. Moreover, one can think of regulation in various ways. Sørensen (1995) distinguishes between *regulation by self adjustment* and maintenance of equilibrium within closed systems on the one hand, and *intentional regulation* with an intentionally acting subject as the driving force behind the regulating activity, on the other hand (Table 2). By combining these two types with the instrumental versus the institutional perspective she ends up with a typology of four different types of regulation.

Regulation by self adjustment from an instrumental perspective is represented by Adam Smith's theory of the regulating capacity of the market economy, where actors with goal-oriented rationality strive at reaching goals optimally with most efficient use of resources. Relevance of participation is here limited to eventually communicating the non-marketed benefits of forests.

Jürgen Habermas' theory about communicative rationality is taking an institutional perspective, but is also based on an idea of self adjusting systems, however focused on the production of social norms in the life world (Habermas 1984). Here, participation is the core element in regulation, as it assumes citizens ability and will to enter a 'sincere and deliberate dialogue'.

Max Weber's top-down model represents the classical view on regulation in political science, developed as a tool with which political leaders can implement their goals. Legal authority is seen as the key to transform political authority into administrative sets and hierarchies of rules, a bureaucracy. Bureaucracy institutionalises a separation of policy formulation and policy implementation, and it formalises and rationalises the implementation process to the extreme. The ideal model of a bureaucracy is a machine: all actions should be predetermined through a detailed distribution of tasks and controlled through a strictly hierarchical distribution of competence (Sørensen 1995).

Table 2. Instrumental and institutional perspectives to forest management. (Source: Sørensen 1995, p. 50)

Form Substance	Regulation as self adjustment	Intentional regulation
The instrumental perspective	The Invisible Hand Model (Adam Smith)	The Top Down Model (Max Weber)
The institutional perspective	The Community Model (Jürgen Habermas)	The Bottom-up Model (B. Hjern and C. Hull)

The problem is that reality is not strictly rational, so bureaucratic control happens to be at the expense of reaching the desired goals. Therefore, it has been tried to develop a regulating apparatus that is better at solving policy problems, at actually reaching the goals. This is what is also increasingly seen in European forest management by, e.g. the use of voluntary agreements between public authorities and private land owners.

Clearly, the role of public participation within such a top-down system is limited in terms of power redistribution, whereas it may have prospects for improving the system's ability to reach the goals, partly by creating and sustaining public support of the system as well through local or scientific advice to the system.

As the ultimate alternative, Sørensen (1995) suggests a bottom-up model of regulation, taking an institutional perspective and relying on intentional action. As opposed to the top-down model, the bottom-up model relies on the individual, not the organisation, as the basic unity of action, and intentionality is not tied to leadership but is linked to every single individual involved in the process of regulation. This fourth category of regulation seems to have less firm theoretical grounding than the other, but it is relevant to study, as it seems to quite well characterise today's types of regulation, also in European forestry, as they mostly take place in co-operation between a number of organisations at various levels, and not one autonomous organisation. Further, informal phenomena such as motivation, mutual understanding and normative integration in an organisation become crucial for the realisation of successful regulation.

As proponents of this type of regulation, Hjern and Hull (1984) claim that goal formulation and selection of means should be produced in a dialogue between all those involved in the regulatory process. Hierarchical relations may still exist, not a priori related to formal organisational features, but emerging in the informal relationship between the individual members of an organisation. Where the other three types of regulation rely on each their type of rationality, this bottom-up mode of regulation is suggested to advocate the use of empirical studies of actual regulation processes to uncover the many conditions and causes influencing a specific regulatory process.

Each of the four models of regulation and the related rationalities may continuously be justified within the particular social subsystem to which they have been developed. It is the application of one particular rationality and model of regulation to all societal spheres that could be criticised. On the other hand, choosing a bottom-up model of regulation with no standard 'rules of regulation', no basic rationality, implies the risk that it never moves beyond tradition.

Implications for research: Studies of the relationship between different forms of regulation/governance and reaching specified goals, and how it fits with actors' access to participate in decision-making, to information, etc.

4. WHAT CAN WE LEARN FROM THE DIFFERENT WAYS OF APPROACHING PUBLIC PARTICIPATION?

In this paper five different types of analytical framework have been presented for studying participation, each of which contains internal contrasts. At the same time, all the perspectives presented are related, and the contrast between an instrumental versus an institutional perspective appears in all of them. The democracy perspective inevitably deals with power and efficiency, as the aggregative democracy perspective is closely related to the instrumental efficiency perspective, whereas the integrative democracy perspective is closely related to an institutional efficiency perspective and a structural power perspective. Similarly, the regulation perspective focuses on the 'output' side of democracy and is also comparable to the efficiency perspective.

Still, it may be beneficial to take the different perspectives into account in order to also recognise the differences. For example, voluntary agreements are increasingly used as a means in current Nordic forest policy, e.g. to enhance biodiversity of private forests as in Sweden or to enhance private afforestation as in Iceland. From a regulation perspective, voluntary agreements between public forest authorities and private forest owners may improve bureaucracy's chance of reaching the political goals. However, from an integrative democracy perspective, voluntary agreements tend to privatise what should be public decision making and management of public funds and hence makes it inaccessible to participation by the public at broad.

Considering the different perspectives for studying public participation in forest policy and management, our ambition has been (1) to show the major potential for gaining interesting, new knowledge on the nature of participation, by deliberately drawing on political theory, (2) to stress the need for public participation researchers to identify their own values and ideological positions and how it relates to their research approach and implications for results. By doing so, the potential for comparing different studies across political cultures, nations etc. is greatly improved. As suggested by Shannon et al. (1996) science advocacy is inevitable, so we should deal with it. A first step could be reflection of own political attitudes and beliefs before designing the next research project.

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LINKING SOCIAL NEEDS AND INTERESTS IN REGIONAL FOREST PLANNING: A CASE IN FRANCE

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ABSTRACT

The regional forest planning in the Massif of Bauges (French Alps) has to respond to the special natural constraints of the mountain climate and to meet opposite expectations and interests. The interest groups involved in the political debate are supposed to represent various concrete social needs. But presently, the demands from environmentalists, from tourists' and wood industrials' associations do not always represent the expectations of the rural population. From this viewpoint, the public discussion restricted to interest groups cannot identify and satisfy the real social demand.

An enquiry, conducted in some communes of the region, along with an analysis of local interests, provides the implications and limits of the link between social needs and their representation by local interest groups.

Keywords: social needs, interest groups, regional forest planning, mountain forests, France

1. INTRODUCTION

From a technical viewpoint, regional forest planning is confronted to the special natural constraints of forestry. Particularly in the mountains, decision in planning process is affected by the natural constraints and events, which makes it more risky than anywhere else. Short and middle-term risks characterise every forestry intervention because of the great sensitivity of landscape, soil and stands. In addition, forest planning in mountainous areas manages a contrasted poor resource (low productive stands, high management costs, hardly accessible stands, unpaid environmental externalities). Although the role of forestry in rural development can be important, the forest sector takes little interest in the local policy and compared to agriculture it gets little funding.

On an other hand, regional forest planning in mountainous areas has to respond to the various demands from ecologists and environmentalists, from owners, forest industries, farmers, craftsmen, tourists and tourist officials. Each one of them represents a category of forest users, with sometimes opposite or competitive claims. In its search for a more democratic political process, forest planning is beginning to take into account the interests of forest users. In this way, regional forest planning assigns interest groups a role of representing social demands from forestry.

The aim of this study is to analyse the representativeness of interest groups in regional forest planning, starting from the example of the expectations of the local rural population and the way it is supported by the existing interest groups.

2. PARTICIPATORY TENDENCIES IN THE DECISION MAKING PROCESS OF LAND MANAGEMENT IN MOUNTAINOUS AREAS

The international debate on multifunctional forest management is a recent phenomenon which has initiated participation to forest policies. This debate seems to part from the concepts of productive forest and protective forest, insufficient for ensuring social acceptance of forestry activities. The multivalence of forests should be acknowledged through a non-exclusive management, which would officialize the different interpretations of forest's utility. Besides, a multipurpose approach should help to find a compromise among the conflicting interests raising from recreationists, productivists and environmentalists. On the other hand, a population more concerned and interested in forest due to large-scale media coverage of environmental issues, can be mobilised to support the action of interest groups.

The decentralisation initiated in France in the mid-1980s has given additional power and initiative to local population through their elected representatives. The additional power at the regional level implies more direct responsibility on the part of representatives and more political transparency. The politicians try to legitimise the public decision through participation of the interest groups. Interest groups are the main partners for two reasons:

- They are a structure of power, which facilitates their association in public discussions. Corresponding to the principle of "symmetrical organisation" (Fleischman 1997), the decisional public structure in forestry prefers to interact with a small number of units and with structures similar to themselves; and
- They are supposed to represent social demands in forestry, because they speak on forest users' behalf.

Moreover, decentralisation has stimulated lobbying because of the multiplication of decisional level and structure, with many possibilities for political intervention, more difficult control and transparency (Portelli 1996).

Finally, participation in the decision making process concerning forest use management is a theoretical problem of political legitimisation. The public authority as well as the interest groups try to legitimate their action against the other stakeholders and also to legitimate themselves towards the community they are supposed to represent.

3. SOCIAL NEEDS AND INTERESTS IN FOREST PLANNING FORMULATION

The role of interest groups in representing the general social expectation could be analysed in the theoretical framework of rationalist and incremental public decision, but it could be also interpreted as an institutionalisation process in the institutionalist framework.

In the rationalist approach of strategy planning, the decision is a succession of linear steps (objective formulation, strategy formulation, program defining and implementing) to which the interest groups hardly contribute. Their role is to provide the political decision-makers with relevant information and to have the issues placed on the political agenda. Later on, the decision is taken or not, but there is no further consultation of stakeholders, be they “victims” or “beneficiaries” of forest planning. Yet, all along the political process, the decision can be adjusted for budgetary reasons (economic constraints, natural events and constraints).

This model of linear strategy was criticised by Mintzberg (1994) because there is no explanation of the objective formulation. The decisional process is separated from its social context, so the objectives of forest planning seem to be abstract entities with no link with the emergence of social reality in politics.

From an incremental point of view, the model proposed by Buttoud and Samyn (1999) and used by Marocico (1999) describes the political decision as a participatory cycle responding to the “missing detail” (Mintzberg 1994) on objective formulation. This model acknowledges that interest groups can actually intervene in the whole political process and so permanently influence strategy planning (Figure 2). Thus, the decision results from a co-operation/confrontation/negotiation between the public authority and the interest groups in a continuous adjustment process. The objectives of forest planning emerge from a process which is both hermeneutic and dialectic aiming at integrating the interests at stake (Buttoud and Samyn 1999).

From the institutional point of view, interest groups are the only social reality in touch with decision makers and their role is to make visible the general expectation of

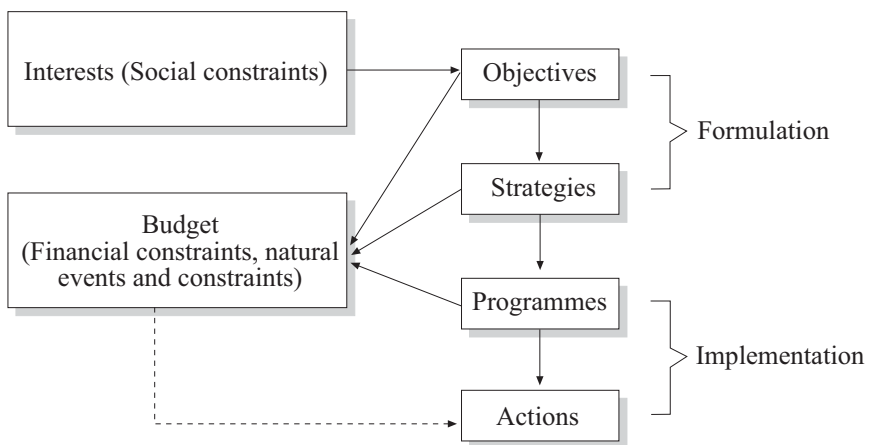


Figure 1. Strategy forest planning from a rationalist viewpoint (adapted from Mintzberg 1994).

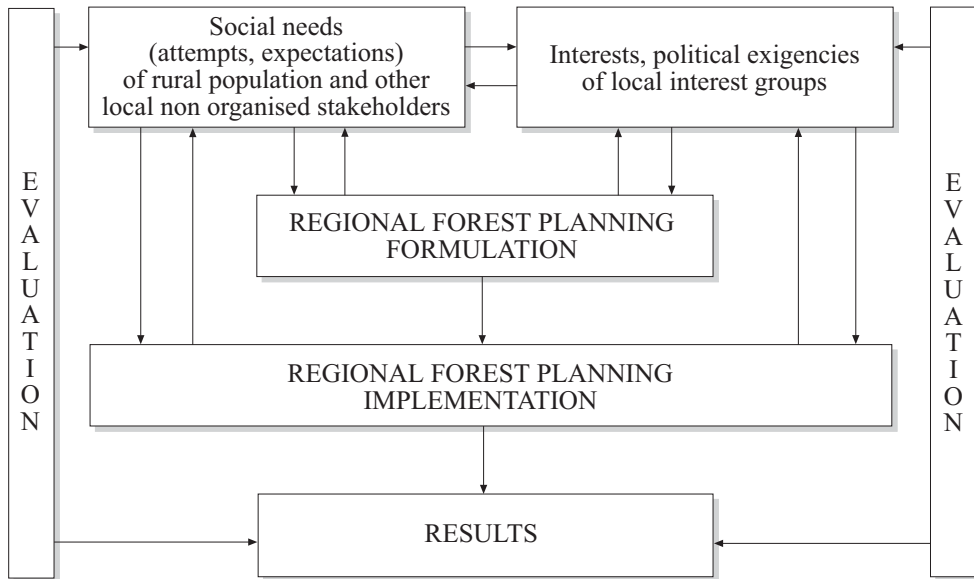


Figure 2. Regional forest planning in the incremental-participatory viewpoint.

society (Braud 1992). As a social institution, the interest group is characterised by constitutive rules, collective intention and a lot of unintentional capacities which represent the “background” of the collective action (De Munck 1998). This background is a set of practices, capacities, customs, and attitudes enabling the institution to work (Searle, analysed by De Munck 1998). It could be interpreted also as the implicit knowledge which is used as the basis by the institution (Authier and Hess 1981). According to this theoretical assumption, the social needs and expectations in forestry are one component of the background of interest groups participating in forest planning. As they have a non-intentional dimension, the social needs and expectations cannot appear in the political process which can only be intentional. Consequently, the social needs and expectations are institutionalised (expressed) in the political process by the interest groups. This first institutional interpretation of interest groups considers it in an intentional perspective.

A second one is related to the notion of conflict which is not generated by the resource allocation or distribution of power, but which is the essence of social life. The interest groups result from the institutionalisation of a permanent opposition between the instituting body (society) and the instituted body (public authority). Since the society’s point of view on forest management could differ from the public authority’s, the interest groups interfere to contest the legitimacy of public decision.

Associating interest groups in decision making is a kind of “falsification” (faking) on the part of the instituted body (public authority), because accepting another structure to represent social needs is denying own one’s legitimacy. The survival of the instituted body depends on a rigorous association with anti-establishment groups, but that does not mean that the institutionalisation process comes to an end because interest groups associated in the political decision will be inevitably contested as well as the public authority themselves. Besides, this is one of the limits of participatory processes (Buttoud 1999), mentioned as “auto-maintenance of the discussion policy process”.

The institutionalisation does not operate only from the instituting body (society) to the instituted body (public authority), but also in the opposite direction. In return for the extra power gained (power as well as legitimacy, association to decision, meeting of claims, etc.), the interest groups are supposed to institutionalise the new rules resulting from the negotiation with public authority.

4. SOME TECHNICAL CONSIDERATIONS IN ORDER TO ANALYSE THE LINK BETWEEN SOCIAL NEEDS AND INTERESTS IN REGIONAL FOREST PLANNING

4.1 Reasons for the loss of representatives

The empirical analysis of the representativeness of interest groups in forest planning was conducted in the mountain Massif of Bauges, in the French Alps. It is a forest massif in the middle of the mountains, with a contrasted situation of stands productivity, coniferous for the most part. The forest covers 53% of the land area of Bauges and it is under the ownership of the communes (44%) and of the private owners (54%). The State owns only 2% of the forest in the Massif of Bauges, but the public administration manages the communal forest.

The Massif of Bauges is surrounded by some important urban centres, such as Chambéry, Annecy, Lyon and Geneva. The recreational importance and attractiveness for tourists of the massif has increased with the recent creation of the Natural Regional Park of Bauges. However, Bauges is still a lively rural region. Consequently, the forest planning is faced with a wide range of needs and interests.

The aim of the study was to see whether the interest groups involved in regional forest planning really reflect the social needs and expectations they were supposed to represent. The loss of representativeness seems to have three main sources.

The first source is an internal source – specific to the group and difficult to detect – in which some of the members' social expectations disappear in the process of the formulation of collective interests.

The second source of the loss of representativeness is due to the possibilities that leaders have to defend their own interests, or the interests corresponding to their own perception of a group action. These two sources of loss of representativeness appear only where the stake is important because of the interests, the stakeholders or long-term consequences of the decision, which is not the case on the regional level of forest policy formulation.

The third source identified here is external to the group action. In fact, each group takes into account the expectations of a precise category of forest users, but all the people concerned in forestry may not be represented. This situation is more typical at the regional level, which can be checked easily.

The subject of the study was, on the one hand, the local rural population considered as a collective, but non organised stakeholder and, on the other hand, the local interest groups whose activities are related to regional forestry. The technical instruments used were a survey of the local population and the interviews of representatives of different structures involved in regional forest planning (forest administration, other public administrations, ecologist groups, forest and agricultural trade unions, etc.).

To identify the social needs in forestry, the inquiry first tried to define “social knowledge”. The starting idea was that the expectations of people in forestry depend on individual representations of the forest utility and on individual “daily use” of forests. Thus, the inquiry was planned as an open questionnaire, and to collect quantitative data for statistical analysis.

4.2 Social needs of rural local population

The perception of forestry by the surveyed population differs from its image in media coverage or political discussions. Due to the daily presence of forests in their environment, the remarks of people are far from what is shown on the TV (e.g. deforestation, forest fires) and what is claimed by the ecologist groups (too much human intervention in forests, too many roads). Instead, the local people mention the decreasing value of wood, the missing forest roads, the abandonment of forests and of the wild life as the main problems in forestry.

The inventory of social representations of the local population in forestry has revealed a wide range of forest utilities (Table 1).

One part of the questionnaire asked people to describe how they would see the preservation of forest. Preserving the forest “in situ” with no human intervention is the opinion shared by 11% of the interviewed people. Another 15% seem to accept that the conservation of forest should be completed by maintaining intervention. Most of the interviewed people (71%) are for maintaining forests by harvests.

The responses recorded present a few differences from one commune to another, especially because of the differences in the characteristics of the population. According to the occupations of the people involved in the sample (farmers, people working in the city, farmers providing tourist services) some of the recorded expectations (needs for more information about forest planning, claims for subsidies for private forests, need to keep up forests, anxiety resulting from tourism pressure) appear in different proportions from one commune to another. At the same time, differences can appear due to the age of the population. For the young, the forest is a component of a natural environment whereas for older people the forest has an investment and a family value.

Table 1. Representations of forest by rural local population.

For them forest represents:	Total recorded answers
Natural environment (natural surroundings of wild animals and birds, natural surroundings of game; natural environment to be preserved; source of biodiversity)	33%
Clean, non-polluted atmosphere	6%
Landscape and leisure	24%
Wood and investment	19%
Soil protection, watershed protection	18%
Total	100%

This large interpretation of forest values shows that the expressed expectations and needs of the rural local population are strongly linked to the idea of multifunctionality. Therefore, the multifunctional rationale of the rural local population is completely different from the rationale of the interest groups, necessarily oriented towards a well-defined utility of forests. The local population and the interest groups may even be in conflict, which was the case with the creation of the game reserve in the Massif of Bauges, where environmental, ecological and hunting interests overrode those of the local farmers.

4.3 Presence of local interest groups in regional forest planning

In the present forest planning system, the decision authority cannot take into account the social needs that are not represented by the interest groups. Even when supported by an interest group, the social needs may be ignored because of the rational centralised process of decision, inefficient political manifestation, competition between interest groups, and so on.

The study conducted in the Massif of Bauges identified 3 main categories of interest groups, unequally present and involved in regional forest planning:

- the ecological groups who call their activities discovering nature or safeguarding rural local heritage;
- the ecologist groups; and
- the sector-based groups, which represent the interests of social categories – farmers, private owners, wood industrialists, and act as a trade union, a professional association, an economic structure, etc.

Each group has different ways of representing the social needs. The ecological group aims at making the local community or visitors share a belief, an ideology, a message, originally derived from ecologist ideologies, but more oriented towards public leisure and educational activities than towards the public authority. That kind of group could be interpreted as an associative structure with a role in communication in and mobilisation of local community. They are rarely associated with or consulted in the public decision, partly because they are numerous and small.

The ecologists are found on the opposite side. There are few ecologist groups, but most of them are local, territorial branches of national or international ecologist movements (such as FRAPNA, a branch of France Nature Environnement). These groups do not need to make as much communication effort towards their sympathising members as the first category mentioned because they are not representing various social needs, but one general cause or idea, universally acknowledged.

Thus, they are more able to lobby public decisional structures, having a more radical position and offering fewer possibilities to negotiate. Their own ideology makes it necessary to maintain a protesting attitude and to stand aloof from the political process, guaranteeing at the same time devotion to the cause and objectivity in the eyes of group sympathisers. From an institutionalist point of view, standing aloof from the political process means anticipating the “falsification” (faking) that the instituted (public authority) are to achieve: implying ecological groups in forest planning is the way to enforce their own position.

Traditionally, the most ready to negotiate and to be consulted are the economic lobby. To better defend their interests, they elaborate interface structures (co-ordination structures, associative body, voluntary conventional framework) between different interest groups with similar claims.

Until recently a productivist planning orientation has been to facilitate the participation in political decision of the sector based groups as a politically representative body of the social needs. The legitimisation of these groups towards their members depends on the privileges obtained through their relatively close relationship with the public authority. Privileged access to the public authoritative decision-making process is granted on the basis of adherence to certain norms. In addition to performing a representative function, interest groups also perform a regulatory function over their members on behalf of the state (Williamson 1994). This is the second direction of the institutionalisation: the compromise that the interest groups manage to negotiate with the public authority will be institutionalised over the instituting (Figure 3).

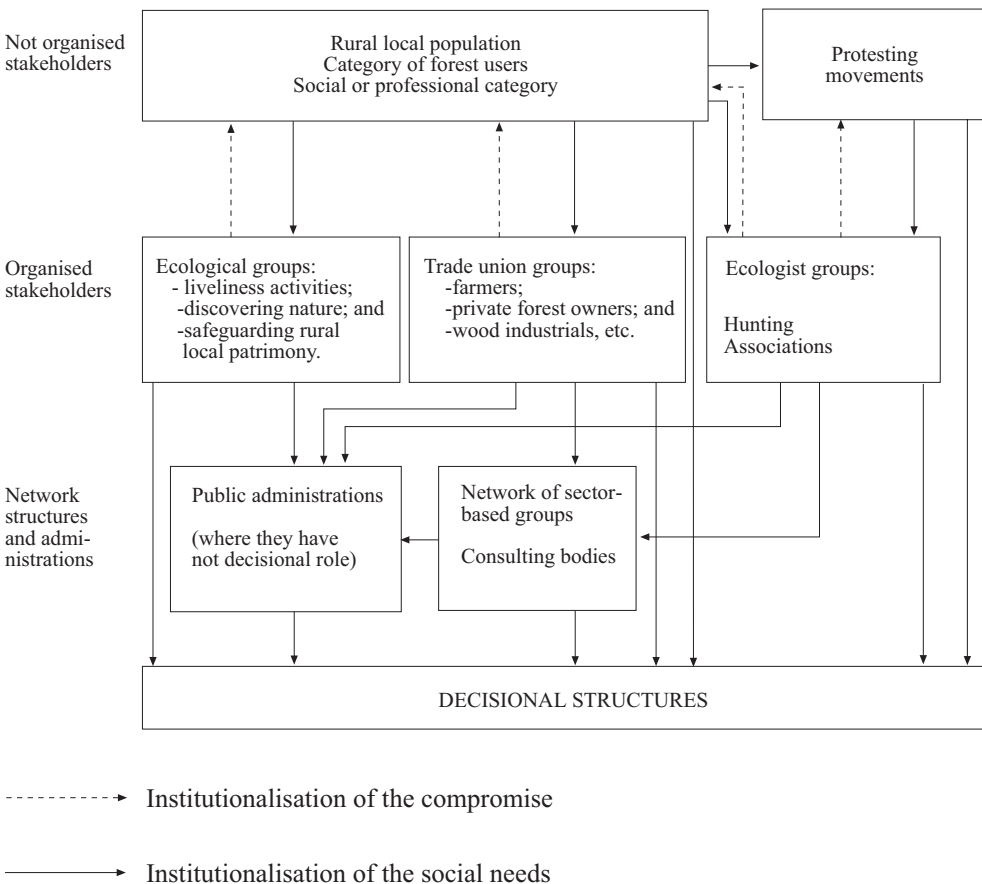


Figure 3. The institutionalisation of the social needs and the institutionalisation of the compromise

5. CONCLUSION

Between the environmentalists and the productivists, the role of the rural local population as interested stakeholders is often ignored.

Of course, their needs and expectations are supposed to be known by their representatives. On the other hand, regional forest planning formulation considers the expectations of some categories of forest users (tourists, hunters, trekkers, local craftsmen and tradesmen, shopkeepers) and it takes into account some large scale expectations, such as the need for landscape. But the expectations of forest users can be different from the expectations of rural local population who, on the whole, have a particular opinion of forestry.

Linking social needs and interests in regional forest planning could be envisaged in the following framework:

- the expectations of rural population should be considered earlier in the process of forest planning, if possible in the phase of diagnosis and objective formulation. Whereas now, the public can react only after the planned forest action has been made known;
- in order to achieve it, an arrangement will be necessary to know the needs of rural population and to record their evolution. That could be carried out through inquiry, questionnaire, impact study, public workshop, etc.
- yet, the knowledge of social needs is not a guarantee for their representation in political process.

A solution should be found in order to enable the local population to participate in forest planning formulation through a representative structure, without which the negotiation would not be possible. There should be a direct commitment of rural inhabitants, of their political representatives or interest group closest to their expectations.

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PRACTICAL EXPERIENCES FROM THE FORMULATION OF REGIONAL FOREST PROGRAMMES IN FINLAND

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ABSTRACT

Finland is one of the pilot examples of those European countries where forest and related policies and practices have been developed towards emphasising ecological, social and economical features of forestry. Recently, participatory planning approach in forest management planning has been stressed especially to help to integrate various goals for forestry to the practical management of forests.

Sub-national – or regional forest programmes – were prepared for the thirteen administrative forestry districts in Finland to improve the formulation of the national forest programme. Key actors in the preparation of regional forest programmes were the thirteen regional Forestry Centres – the organisation responsible for the practical implementation of forest policy. In drawing up the regional forest programmes, the Forestry Centres co-operated with the relevant interest groups dealing with forestry in their districts. Local people were encouraged to participate into the programme goal setting in common hearings and meetings. As the participation of local people was strictly on a voluntary basis, people's participation in the process varied substantially.

On the basis of the practical experiences from the process for formulating one of these regional forest programmes, the paper concludes that they have been beneficial for the preparation of national forest programme. As people's participation in the decision making can be considered a basic principle for regional forest programmes, this should be even further emphasised in the follow-up processes.

Keywords: regional forest programmes, forest policy, forestry, Finland

1. INTRODUCTION

Finland is one of the first examples of those European countries where forest and related policies and practices have been developed towards emphasising evenly all the economic, social and ecological features of environmentally sound and sustainable management of forests (Hyttinen 1997). Recent developments to reformulate the forest policy aims in Finland are stated in the Forest Act which came into force at the beginning of 1997. The overall aim of the Act – to maintain and promote economically, ecologically and socially sustainable forest management – can be derived from the Forest Principles stated at UNCED in 1992, the Helsinki Resolutions given in 1993, as well as from the Finnish Environmental Programme for Forestry. The new Forest Act given an equal status to timber production and to securing biodiversity (Hyttinen and Tikkanen 1999).

The Forest Act of 1997 introduced for the first time a new instrument to promote and implement the sustainable management of forests – the regional forest programmes. The development of regional forest programmes is in line with the Resolution H1 (General guidelines for the sustainable management of forests in Europe) of the second Ministerial Conference on the Protection of Forests in Europe, held in Helsinki in 1993. The resolution states that:

Forest management should be based on periodically updated plans or programmes at local, regional or national levels, as well as for ownership units, when appropriate and on forest surveys, assessments of ecological impact and on scientific knowledge and practical experience.

Like the national forest programmes at the national level, the regional forest programmes specify at the regional level the general goals for sustainable forest management and the necessary measures for forestry development. The first round of regional forest programmes in Finland was completed in April 1998. After that they were used for the formulation of national forest programme for country in 1999.

In this paper, the principles of building up the regional forest programmes, their formulation and role in national forest planning are described using an example of the recently formulated regional forest strategy for North-Karelia, which is one of the thirteen administrative forestry districts of Finland. Also the plans for a follow-up process where the programme is regularly revised are presented in the paper. In addition, conclusions for the improvement of the participatory approach in the process for developing sub-national forestry programmes with respect to theory of public interest are drawn.

2. PUBLIC PARTICIPATION

The formulation of national or sub-national forest programmes as a mean for implementing various policy processes is based on the search for optimum choices among various alternatives. Earlier, the policy processes were based on the comparison of the benefits and costs of policy decisions. After the disappointments in searching for

a policy optimum, it was realised that the state and policy makers are dependent on the voluntary co-operation of various organisations. The importance of co-operation also explains the importance of the participation of all relevant actors in the policy formulation processes (Glück 1998).

The described process to formulate regional forest programmes in Finland is an example of a more general trend in society to increase people's participation in public decision making. The theoretical justification for the increase in public participation in programme or policy formulation lay in an assumption that there is a common or at least majoritarian interest, instead of an infinite number of conflicting interests (Schubert 1983). With the participatory planning approach, it is expected that the majoritarian interest or a common will can be found, and that the majoritarian interest provides higher social welfare than any separate individual interest. In general, the five key arguments supporting public participation are (Dockstator 1990):

- Increased public involvement increases the democracy in the legislative and bureaucratic decision making processes. The participatory process involves an equal access to the planning process by all competing views, not solely by the well-organised and powerful, as often without public participation.
- Participation increases the likelihood of a proposal being accepted by the public.
- Public involvement in the development of plans and policies enables the public desires and wishes to be correctly identified.
- Public participation increases the opportunities for public involvement that are otherwise limited to voting and elections.
- Public involvement can help promote conflict resolutions.

Public participation can be defined broadly as *providing an opportunity for the public to take part in process in a structured manner*. From this broad definition, it is possible to distinguish *participation* where the public *is* involved in the decision making from *consultation* where the public is approached in common hearings and other means, but it *is not* involved in decision making (Dockstator 1990).

Public participation includes a diverse set of processes where the involvement of the public in the planning, goal formulation, decision making and implementation of the programmes and policies varies considerably. Dukes (1996) provides a distinction between the various participation approaches:

- In *ad hoc* participation, most public decisions are made using required forums of participation, including notification, public hearing, publication of intended decision and opportunity for appeal.
- In visioning, a substantial portion of the public is involved in imagining the desired future and in setting goals for how that future could be attained. Visioning is typically focused on the long term, even twenty years in the future.
- In facilitated dialogue, a facilitator invites or calls for participants into forums which nourish a productive dialogue of the programme or policy in question. A common feature for the facilitated dialogues is that there is a moderator, i.e. a facilitator that leads the discussion and debate of the parties. The role of the facilitator is essential in bringing together all the relevant views without losing the operability of the process. Facilitated dialogue may be implemented through public debates, open lectures, study circles or decision conferencing.

3. REGIONAL FOREST PROGRAMMES – PREPARATION PROCESS

3.1 Main issues

While the formulation of the regional forest programmes is based on legislation in Finland, they are not legally binding. The objective of the regional forest programmes is to get an overall view of the forest sector and its development needs and possibilities in the district of each Forestry Centres. The ultimate purpose of the programmes is to identify the specific ecological, financial and social characteristics of each district, and integrate them into the sustainable management of forests. In defining the sustainable measures, the leading idea is to find a harmony between the economic, ecological and social objectives for forestry.

The current status, goals and development objectives of various forms of forest utilisation are described in these programmes. They also include the general targets set for promoting sustainable forest management, the targets set for the measures and their financing as specified in the Act on the Financing of Sustainable Forestry (1094/1996), and the overall targets set for the development of forestry in the district. The significance of forests for employment, and an estimate of the economic and environmental impacts of the adopted goals, are emphasised throughout the programmes. In minimum, the following items were assessed *a priori* necessary for the prepared regional forest programmes:

- overall description of the forest related facts and issues (SWOT analysis);
- regional development needs and objectives
 - production and use of timber
 - biodiversity
 - employment
 - entrepreneurship and industrial activities;
- proposed measures to reach the objectives; and
- assessment of economic and environmental impacts.

During the first round of the regional forest programmes, which was completed at the end of April 1998, the most actual development issues were those related to employment and income generation. Therefore, in most programmes these issues got the main emphasis.

3.2 Basic principles

Participatory planning approach has been emphasised in the formulation of regional forest programmes. This includes the basic principles of co-operation, comprehensiveness, bottom-up approach and transparency.

In practise, the principle of *co-operation* was implemented with the discussions and work between the Forestry Centres and bodies and institutions representing forestry and other organisations in the district. Especially forest owners, forest industries, forestry entrepreneurs, loggers and other forest employees, public administration, municipalities, nature conservationists and civic organisations were involved in the planning process.

Local residents were encouraged to express their concerns at regularly organised common meetings. The Finnish Forest and Park Service, which is the body responsible for the administration of state-owned forests, assisted in preparing a programme for the management of state owned forests and, correspondingly, companies helped in creating the programmes for their forests.

The principle of *comprehensiveness* meant the involvement of all the sectors of society in the preparation. In each phase of the process, and in the measures proposed, links to other sectors of society were taken into account. The inter-sectoral approach was one of the key features of the prepared regional programmes.

The principle of *transparency* was implemented by emphasising the importance of open information and interaction. This was aimed to be achieved in the preparation process by establishing a steering committee and various working groups for the programme, utilising expert analyses and commenting rounds for the programme drafts – not to mention but a few. In all phases, the distribution of information between various actors was emphasised. Different opinions were recorded and serious attempts were made to reach consensus.

The public was encouraged to participate in the formulation process in various ways, e.g. by arranging public hearings where the objectives and content of the programme were discussed. The *bottom-up* approach was seen essential to be able to include and consider the diverse goals of people toward forestry. Unfortunately, the interest especially among non-forest owners was not high in the process.

3.3 Strategy formulation

The phases for the preparation and follow-up of the regional forest programmes were common to any strategy formulation process. In any phase, returning backwards to any of the previous phases was made always possible (Figure 1).

The final product of the preparation process was a document including approximately 50 pages of text and annexes. However, it has to be emphasised that the development of a regional forest programme is more than a paper. It is a continuous process where evolving issues are integrated and the programme updated accordingly.

The measures to be taken at the implementation phase determine the success of the process. The programme is planned to be revised every five years or even at shorter intervals if necessary. The follow-up process started immediately after the completion of the preparation phase, and the first up-dating is to be done already by the end of 2000.

3.4 Role of regional programmes in the formulation of national forest programmes

The first round of the regional forest programmes that were prepared during 1997-98 were used as a basis for the national forest programme prepared in 1998-99. The paper documents of the regional programmes were made available for all the people involved in the preparation of national forest programmes. In addition, the process of the preparation of national forest programme included two public hearings arranged by the Forest Centres in each region. In those occasions, the outcome of the regional

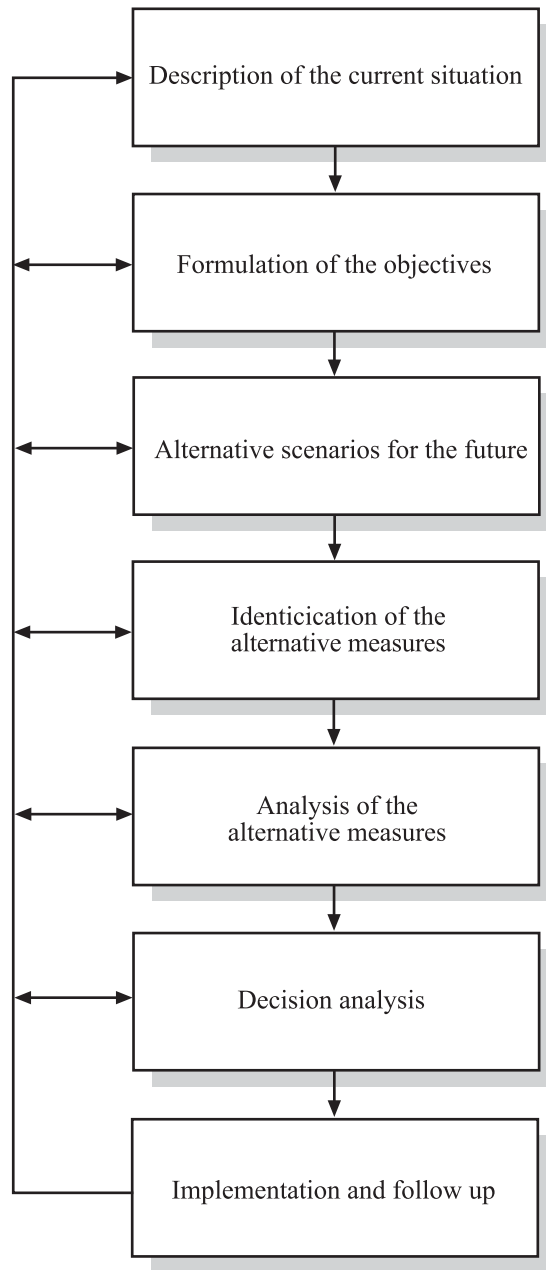


Figure 1. Main phases of Regional Forest Programme formulation.

programme was clarified and the interested persons and organisations were invited to discuss and present their views in verbal and written form (Finland's... 1999).

The most significant benefit of the availability of the regional programmes was that the regionally specified features, issues and objectives could be taken into account in the preparation of the national forest programmes. Therefore, for example, different types of location-specified land-use restrictions were recognised at the national level better than

in earlier action plans for forestry (e.g. Metsä 2000 – Talousneuvosto). In addition, the needs for silvicultural works and forest improvement works were taken to the national forest programme directly from the regional programmes. Regionally adjusted estimates on timber supply were also used in the assessment of the potential national timber supply.

It has to be emphasised that the national forest programme was not – and cannot be – prepared as a sum of regional programmes. This is due to the fact that the national optimum is not a sum of regional optima. Correspondingly, the national forest programme and its action plan is not necessarily the optimum situation from a viewpoint of a single region. The best result can be achieved probably if regional and national programmes are developed interactively.

3.5 Regional forest programmes and rural development issue

There are not only national but also international co-ordination needs that have to be taken into account in the preparation of regional forest programmes. The series of Ministerial Conferences on the Protection of European Forests and the various international processes following the 1992 Rio UNCED meeting have several consequences at the regional level, especially related to the concept of sustainability and its interpretation.

The most recent considerations are due to the increased emphasis of forestry matters at the European Union level. Both the Forestry Strategy of the European Union and the Agenda 2000 Programme emphasise the importance of national and sub-national forest programmes as the basis for the use of the European Union Structural Funds. In fact, because of the idea of “Europe of Regions”, from the viewpoint of the EU, sub-national development programmes can be often more significant than the national ones.

Development of regional strategies based on the interaction of various local and detached actors is one of the most promising approaches to address the questions of future prospects of rural areas throughout Europe. The role of forest sector in maintaining and increasing employment, regional income and value-added production in the rural areas has emerged after the changes taken place in agricultural sector. In many rural areas, forests represent a rich renewable resource and forest-based operations and industries provide the potential for future development. Full and multiple utilisation of the possibilities of the forest sector widens the occupational structure and entrepreneurial base, as well as secures the service level, and consequently, helps in keeping the rural areas inhabited. These pan-European goals for rural development can be easily integrated into regional forest programmes.

4. DISCUSSION AND CONCLUSIONS

The main conclusion related to the first round of the regional forest programmes is that they have been beneficial for the preparation of national forest programmes. By the inter-sectoral approach involving various interest groups and the public largely, they

made the forest sector better known in society. They also emphasised the role of forest sector in regional development more than the earlier forest sector action plans.

Naturally, as the formulation of regional forest programmes, as such, has been a new instrument for forest policy-making, the experience obtained from the Finnish case is still preliminary. Therefore, it is difficult to judge the procedures and principles of the preparation as they were not clear for all the stakeholders and interest groups. Nevertheless, it is evident that the preparation process can be further developed for the future rounds.

The preparation process implemented so far can be assessed in the light of the basic principles adopted in the preparation. Regarding the co-operation, the main problems were not at the regional level but at the national level. The regional programmes were prepared in good co-operation without any major conflicts. Naturally, there were conflicting opinions but the consensus between interest groups was reached via constructive discussions. Also the bottom-up principle worked well in most regions. However, it can be assessed that the principle aim to increase peoples participation was not fully satisfied in all regions. This was due to the fact that public participation varied a lot between regions due to the different importance of the forest sector. The public's activity was related to the importance of forest related matters in the region in question. The transparency of the process was good in general.

The preparation timetable – about one year – was too short to take the benefit of all the possible technical methods and arrangements. For example, the use of modern decision support systems was not possible as there was no time nor resources to apply them in the process.

Based on the practical experience, it can be summarised that the regional forest programmes form a good basis for the development of the forest sector at regional level. They are also a good foundation on which the national forest programme can be built, especially if the regional programmes are developed in harmony with the implementation and follow-up of the national forest programme (Finland's... 1999). There is a good opportunity for the harmonisation at the end of 2000 when the regional forest programmes will be reviewed and adjusted in accordance with the guidelines of the national forest programme.

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WOODLANDS IN THE FOREST OF SPEY - PAST, PRESENT AND FUTURE

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ABSTRACT

The Forest of Spey lies within the Cairngorms area of the Scottish Highlands and is internationally renowned for its natural heritage and landscape quality, to which native woodlands make a significant contribution. This paper describes the background to, and the compilation of, the Cairngorms Forest and Woodland Framework with a particular focus on the participatory and consultative approach adopted. The Framework sets out locational priorities for woodland expansion and management and offers guidance on how these may be achieved in sympathy with other interests. The paper concludes with a discussion of the current and potential uses of the Framework.

Keywords: Cairngorms, consultation, native woodland, Cairngorms Forest and Woodland Framework, guidance

1. INTRODUCTION

The Cairngorms area of Scotland (Figure 1) is internationally recognised for its natural heritage value and landscape quality and has recently been nominated as a World Heritage site. A wide range of habitats are found in the area, ranging from agricultural land on the lowest ground, woodland and moorland on the lower hill slopes and extensive areas of peatland and montane vegetation on the highest ground. Achieving an appropriate balance between the environment and the social and economic well-being of the area has led to a number of contentious debates between different interests over the past few decades.

In recognition of these difficulties and increasing concern that the natural assets of the area were deteriorating, the Secretary of State for Scotland formed a Working Party in 1991 to recommend how the area could be better managed. This Working Party reported back in 1992 with the recommendation that a Partnership should be established to

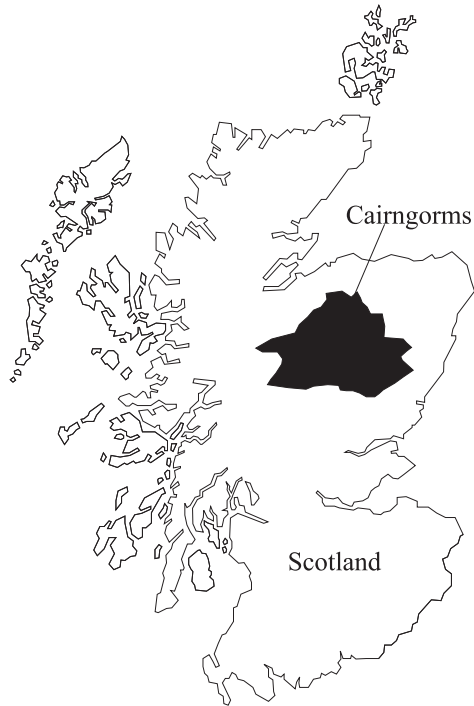


Figure 1. Location of Cairngorms Partnership Area.

produce a Management Strategy for the area and that it should be coherent, reached through consensus, and based on sustainable development, the precautionary principle and a voluntary approach. A draft management strategy was produced in 1996 for wide public consultation and a published Strategy was produced in 1997 (Cairngorms Partnership 1997).

The Cairngorms Partnership Management Strategy sets out a number of strategic objectives for the sustainable management of the natural assets of the area. An identified key area is that of woodland management and in particular:

- the protection and regeneration of native woodland;
- the creation of the new Deeside Forest and Forest of Spey;
- the management of the deer population and grazing pressures;
- and the maintenance and enhancement of extensive tracts of managed heather moorland.

In this context, the term 'Forest' means a mosaic of land uses, in which woodland cover is visually dominant in the landscape and is intimately mixed with other land uses. The interaction between different land uses was clearly recognised and is fundamental to the integrated vision for the Cairngorms.

Further development of the woodland objectives of the Management Strategy was identified as a priority by the Cairngorms Partnership Board and in 1998 the compilation of the Cairngorms Forest and Woodland Framework was commenced. The aim was to build on the existing vision for forestry and woodlands in the Cairngorms,

to identify opportunities for forestry and woodland establishment and management in sympathy with other land-use interests and to provide comprehensive advice to owners and managers of land, but without being prescriptive in terms of their actions. This paper describes the process involved in the compilation of the Framework, its contents and some preliminary thoughts on its application and how it is to be monitored.

2. THE CONSULTATION PROCESS

2.1 The approach

If the Framework is to be workable, a number of questions had to be addressed:

1. What is there already i.e. the location and nature of the existing woodland resource?
2. What is the potential for new woodland?
3. What are the other land uses and interests within the area and the opportunities and constraints which they impose on woodland management or expansion?
4. Do national and international commitments made by the UK Government, for example the targets in native woodland Habitat Action Plans (Department of the Environment 1996) and the European directives collectively known as Natura 2000 (Council of European Communities 1992), impact on the type and location of new woodland?
5. What are the aspirations of local landowners, foresters and the wider community?

The Framework had to achieve a balance between the aspirations of the local communities (5. above), mainly social and economic considerations, and what is actually achievable which is largely driven by environmental and policy factors (1-4 above). To achieve this, consultation with as wide a range of interests was necessary.

This mix of a bottom-up/top-down approach would also ensure some degree of ownership of the Framework by all parties.

2.2 The Participatory workshops

The consultation process set out to achieve three objectives to:

- raise awareness
- identify issues
- develop consensus

Six workshops were arranged, consisting of a day and an evening session in three venues in the south, north-west and east of the Cairngorms. The day sessions were aimed at land-owners and land-use professionals whereas the evening sessions were aimed at the local communities to make their contribution. Well over four hundred invitations were sent out to a wide range of potential consultees drawn from a number of mailing lists and from less formal networks of community and woodland contacts.

The evening workshops were also advertised through a press release, announcements in newspapers and local radio, and through posters circulated throughout the Cairngorms via the network of Community Councils.

All positive respondents received a copy of an Issues Paper, which defined the parameters for the workshops and acted as an introduction and scene-setter for the debate. It addressed the first two of the objectives stated above. This paper covered the range of issues covered in 1-4 above and was generally well received.

Attendance at the workshops averaged about 30 which compares favourably with similar previous and subsequent workshops in the Cairngorms, despite being focused on one fairly specific issue and therefore perhaps of less general interest to the community at large. A wide spectrum of interests were represented at all six sessions.

The day sessions followed a set format and programme (see below) whereas the evening sessions were less formal and varied according to the 'feel' of the meeting. However, all the evening sessions were given the opportunity to contribute to the first breakout session and to the democracy wall. A number of techniques were used to capture as much information as possible, namely:

- Formal presentations synthesising the Issues Paper
- Two breakout sessions viz.
 - The Framework - groups were asked to answer four questions.
 - *What do people want from the Framework?*
 - *What do people not want from the Framework?*
 - *What do people want the Framework to do?*
 - *What do people want to know more about?*
- Identify priority issues (from the democracy wall) and identify six things the group would wish to see addressed in the Framework. The priority issues were:
 - *Impacts and relations with other land uses - deer and moorland (3 groups)*
 - *Recreation, Landscape, Local Communities and Landowners (2 groups)*
 - *Relationship with water and agriculture (2 groups)*
 - *Forest Habitat networks (2 groups)*
 - *Habitat and Local Biodiversity Action plans (2 groups)*
 - *Local Forestry Frameworks and Native Woodlands (1 group)*

Delegates were also invited to make individual, anonymous representations on specific issues (a 'democracy wall') and on the content and relevance of the maps which were displayed. This exercise affirmed that the issues identified were, by and large, the 'right ones'. This format proved very popular and between 20 and 30 responses were received for most issues.

The responses from all of these exercises were recorded and helped inform the content of the consultative draft Framework. Overall, the aspirations expressed by delegates were positive in tone and, in summary, the Framework should:

1. Take a holistic view and be visionary and progressive;
2. Give guidance, not prescription; be enabling, not prohibitive;

3. Provide a focus for:
 - i) the integration, co-ordination and targeting of grants;
 - ii) debate between different stakeholders;
 - iii) identifying employment opportunities and training needs;
 - iv) education and dissemination of information;
 - v) advancing local community interests

2.3 The consultative draft framework

The consultative draft was circulated to around 180 organisations and individuals, including all who attended the workshops. A response rate of 25% was achieved, with some variation seen between different type of respondent. A reasonable spread from inside and outside the Cairngorms was achieved, although there was a higher response rate from the Forest of Spey and Deeside than from the other sub-areas. This response rate was rather disappointing and provokes the question of whether people can become ‘consultation-weary’, particularly if the outcome of the consultation process is not immediately apparent.

Only one respondent expressed some reservations about the Framework mechanism *per se*, and of the remainder, over 75% were broadly satisfied with the content of the Consultative draft. Those respondents who expressed some dissent did so either because, in their opinion, the Framework accommodated landscape/biodiversity objectives at the expense of timber production, or vice versa. The conclusion which was reached from this minority dichotomy of views was that the Framework had actually managed to accommodate the middle ground and achieve a reasonable balance between all interests.

As much of the detail within the responses as possible were accommodated in the final document although it was not possible to include them all. Missing information was included and the recasting of specific key areas clarified some ambiguities identified in the Consultative draft. A major change was the separation of the Framework into two sections: the Framework and Supporting Information. A number of responses suggested that this separation would help the user find the necessary material more readily. Additionally a new section outlining the scope and limitations of, and the assumptions underpinning, the Framework was written.

3. THE FRAMEWORK

3.1. Volume 1 the Framework

As indicated above, the Cairngorms Forest and Woodland Framework (Cairngorms Partnership 1999) consists of two complementary volumes and the component parts are shown in Table 1.

This volume comprises a brief Introductory chapter which outlines the aims and objectives of the Framework and the assumptions underpinning it. The objectives

represent a further development of those expressed in the Cairngorms Management Strategy and are grouped under three broad aims to:

- a) support the local economy and employment opportunities
- b) conserve and enhance the natural heritage, biodiversity and cultural interest of the area and
- c) enhance opportunities for ancillary and related activities.

The assumptions describe the scope of the Framework. It is a strategic planning tool and does not pretend to define sustainability or forestry's contribution to the rural economy; these are major research issues in their own right. Similarly a detailed financial analysis of each of the woodland priorities is also outside the limits of the Framework. The operational standards for all forestry management activity are defined, largely by reference to published information, for example the UK Forest Standard (Forestry Commission 1998). Issues related to mapped data and their interpretation are also addressed.

The Framework section of Volume 1 sets out the locational priorities for different woodland options for the next 15-20 years, the overall potential for natural regeneration and for planting new woodlands and guidance on how these priorities are to be achieved. This has been done for the whole of the Cairngorms and for five sub areas within it (Figure 2). There is considerable variation and local distinctiveness within the Cairngorms area and it was strongly expressed at the workshops that this should be recognised within the Framework. Potential woodland linkages between the sub-areas have also been identified. An integral part of the Framework is the series of maps which

Table 1. The structure and components of the Cairngorms forest and woodland Framework.

<i>Volume 1: The Framework</i>	<i>Volume 2: Supporting Information</i>
Introduction	Introduction
The Framework	Consultation Process
The Way Forward	Woodland Resources
	Relationships between woodlands and other interests
	The adopted approach
	References/Further Reading

Table 2. Areas of woodland potential in hectares and % of total area.

Woodland category	Cairngorms	Forest of Spey	Atholl and Glenshee
Potential regeneration zone	120 319 (18.5)	48 588 (23.5)	10 609 (9.1)
Potential for new woodlands or scrub	367 984 (56.7)	92 324 (44.6)	84 027 (72.1)
Incapable of tree or scrub growth	55 658 (8.6)	18 599 (9.0)	13 690 (11.7)
TOTAL	649 058	207 085	116 654

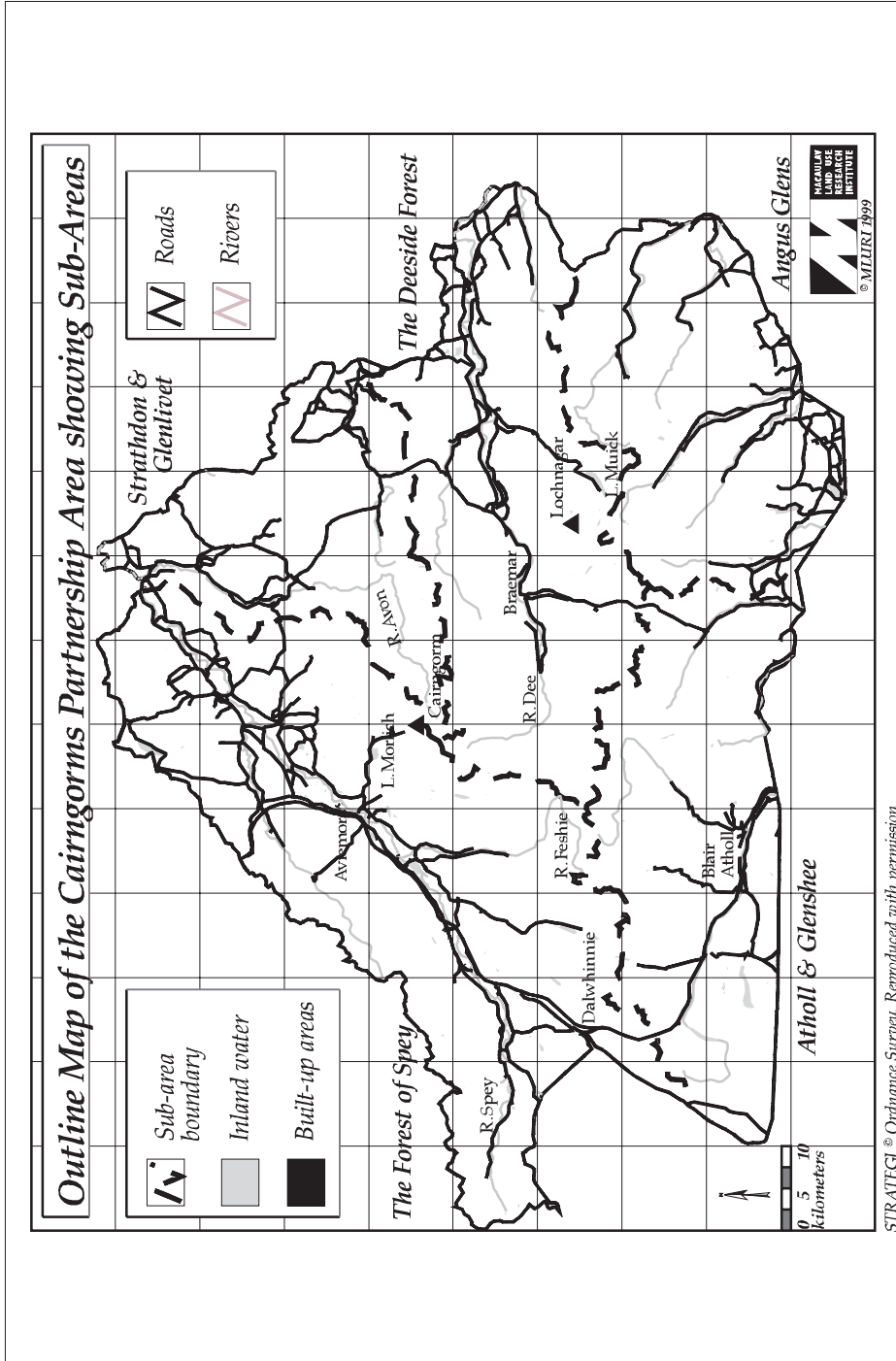


Figure 2. Map of the Cairngorms area showing sub-areas.

identifies different existing types of woodland, areas with potential for natural regeneration, areas with potential for new woodlands and scrub and land which is considered unsuitable for trees or scrub.

Table 2 indicates the broad differences in potential between the Forest of Spey, which has a relatively high existing cover of primarily native woodland, and Atholl and Glenshee which has a lower woodland cover and much of which is non-native.

The locational priorities encompass a number which are generally applicable over the whole area such as ‘a presumption in favour of new native pinewoods on ‘pine sites’ and ‘small scale, well designed broadleaved planting and regeneration will be encouraged on agricultural land and in the riparian zone’. These tend to meet a number of the Framework objectives. In contrast, others are more site specific and are focused on meeting single objectives, for example ‘enhanced management of the existing native broadleaved resource and targeted planting along the A9 and A93 routes’ and ‘create the conditions to allow extension of sub-alpine scrub on Creag Fhiaclach’.

The Way Forward, the concluding section of Volume 1, will be covered at the end of this paper.

3.2. Volume 2: Supporting information

This Volume provides supporting information describing what a Framework is and its relationship with Indicative Forestry Strategies (Introduction), the various phases of consultation involved in its compilation, the existing woodland resource (history, extent, location, type and age structure, socio-economic values) and the relationship between woodlands and other land uses and interests. This last section is of particular importance in that it identifies potential constraints imposed by other land uses on a number of the woodland objectives and priorities described in Volume 1. For example, deer numbers will need to be reduced over large parts of the Cairngorms for natural regeneration to succeed, and the protection of the natural and cultural heritage and of landscape character are prime non-woodland objectives in many parts of the Cairngorms. There are many published guidelines and information notes, including the Forestry Standard, which gives advice and guidance on all aspects of forestry practice and how potential incompatibilities can be reconciled.

In the context of an overall desire to adopt a visionary, holistic and integrative approach to woodlands, zoning of the area relied on two basic complementary tools (The Adopted Approach). Firstly the concept of Forest Habitat networks was adopted (Ratcliffe et al. 1998). This approach aims to create the coherence of a large forest area with a relatively low percentage of tree cover and thereby make the most efficient use of land devoted to woodland. It offers flexibility in the shape, size, nature and location of new woodlands and is therefore not overly prescriptive.

Secondly the natural woodland pattern is the most suitable template for developing such a network. It expresses the inherent pattern of site conditions on which any woodland expansion might be based. This has been done in the Cairngorms using the Macaulay Institute Native Woodland Model (Macmillan et al. 1997). It is based on a series of decision rules which link site characteristics, such as geology, terrain and land cover information within a Geographic Information System (GIS), to the biophysical

requirements for different woodland types and for high altitude scrub. Two digital data sources are used in the application of the model: the 1: 250 000 scale National soils map (Macaulay Institute for Soil Research 1982) and the 1: 25 000 scale Land Cover of Scotland 1988 (LCS88) dataset (Macaulay Land Use Research Institute 1993).

4. USE AND MONITORING OF THE FRAMEWORK

In general terms the Framework is intended to fulfil a number of purposes to:

- a) help resolve conflict and develop a consensus on woodland development throughout the Cairngorms;
- b) provide a strategic frame of reference for the development of targeted grants;
- c) encourage land managers to develop their woodland proposals more holistically and to consider benefits and impacts both within and beyond their own land interests; and
- d) inform at all levels of engagement

In the longer term it may provide a focus for training needs and employment opportunities in woodland and related activities (for example, recreation), be a vehicle for advancing local community involvement and act as a tool for the promotion of woodlands and the marketing of woodland products in the Cairngorms.

The actual use of the Framework is at a very early stage but already it has proved useful in the Forest of Spey. Firstly, its ongoing development helped to inform the parallel development by the Forestry Commission of targeted funding for the expansion of native woodlands. This funding – aimed at native pinewoods, mixed native woodlands with a diverse character, riverside woodlands and strategic native woodlands that provide linkages between larger forest areas – became more focused as the concept of the Forest of Spey and its locational priorities were discussed during consultation and then set out in the Framework.

Secondly, all parties have agreed to ‘small scale broadleaved regeneration or planting, as a farm diversification option on agricultural land’. However, this does not take into account the restrictions imposed by the current structure of land tenure in that farm tenants would not be able to benefit fully from such an initiative. The Framework was compiled, quite deliberately, in the absence of any consideration of land tenure constraints but has served to highlight the requirement for change, perhaps through the current Land Reform proposals, if this widely agreed objective is to be met.

Thirdly and lastly, the Framework has provided a strategic frame of reference for looking more closely at woodlands in relation to each other. The development of the Framework is encouraging landowners in the Forest of Spey to identify opportunities for forest development according to the Framework’s locational priorities for the area. Equally, it will allow the Forestry Commission to further refine the targeting of grant aid in fulfilling these priorities in the area. This will create confidence between the Forestry Commission and the private sector in achieving targeted woodland expansion of native forest. There is also an opportunity for the Framework to inform the proposed review of the local authorities’ Indicative Forestry Strategies.

The Cairngorms Partnership are committed to the Framework as a practical tool and a mechanism for ongoing feedback and consultation is already in place. A seminar was held in late 1999 to discuss in more detail how the Framework should be used by all interested parties: the public agencies, the Unitary Authorities, the timber industry, landowners and their agents, specific interest groups and generally as a forum for informed debate. There is also a proposal to establish a group to monitor the use and success of the Framework – this represents a further development of the Partnership approach successfully being pioneered in the Cairngorms. All of these initiatives, plus new information which will almost inevitably become available, will inform any future revision of the Framework

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THE KYRGYZ FORESTRY CONCEPT: A PARTICIPATORY PROCESS FOR FOREST POLICY FORMULATION IN KYRGYZSTAN

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ABSTRACT

In Kyrgyzstan, the transition to market economy has led to important changes in the national forest policy. New goals and strategies, aimed at the promotion of the economic independence of State forest enterprises, some special incentives to the constitution of a private sector, the reform of the forest service and the leasing of some parts of the public forests to individuals and communities, have been defined through a participatory process with various stakeholders involved. Participation was achieved through discussions, interviews, workshops at different levels and national conferences with the aim of reaching a compromise, consensus being impossible. The next step will be the elaboration of a planning procedure at the national and regional level, which will translate these objectives into operational programmes of action.

Keywords: forest policy, forest planning, participatory approach, Kyrgyzstan, Central Asia.

1. FORESTS OF KYRGYZSTAN

Forests of the Kyrgyz Republic (though inconsiderable by the area, a bit over 4.2% of the total area, while 40.4% is the surface not suitable for forest growing at all – water, rocks, glaciers, the rest being used for agricultural purposes – arable lands, pastures) are of significant importance both for the development of economy and improvement of the environment.

Presently being under the State property, by the provisions of the new forest code, recently approved by the Parliament and signed by the President, forests in Kyrgyzstan in the future can be also of private or community types of ownership.

Forests form a unified “State forest fund”, which includes both forest covered areas and lands which are not covered with forests but are usually intended for forestry

purposes. The total area of the State forest fund is 2.8 mill. ha, including 843 000 ha of forest covered land. The total timber stock is approximately 23.5 mill. m³.

Kyrgyz forests are mainly protective ones as they mainly grow in the mountains on steep slopes. Productive aspect of the forests is not high. The annual amount of timber, harvested by the State enterprises (*leshozes*) does not exceed 50 000 m³, while the country's demand is about 10 times higher and is satisfied by imports from Russia. Timber is mainly harvested in the spruce forests, growing in the north of the country, but as most of the stands are said to be inaccessible, possibly due to the lack of appropriate technologies, the trees are mainly over mature and the output of commercial timber is very low (only 20-25%). Fuel wood forms the major part of the wood extracted from the forest.

Harvesting of commercial timber in the walnut fruit forests, growing in the south of the Republic, is limited by the law, though at present there is some harvesting of burls for export purposes. In the course of sanitary fellings (the only type allowed in the walnut forests), the annual harvest is about 18 000 m³ with 8-10% of industrial quality timber.

The big potential for the non-timber products in the south (walnuts, wild apples, apricots, cheery-plumps) is not used for the lack of the processing facilities and poor marketing. For timber processing, some prime facilities exist but the produced goods are of a poor quality, the reason being the lack of technology and raw material.

The Kyrgyz-Swiss Forestry Support Programme, currently being implemented in Kyrgyzstan, provisions projects aimed at the improvement of the situation by analysing of the timber flow and both timber and non-timber products processing and marketing. Model timber processing workshops are also set up with revised ways of management and updated technologies.

Together with the spruce and walnut-fruit forests, there are also *artcha* (juniper) forests (191 600 ha) and riverside forests (about 22 000 ha), composed by willow, poplar, birch and see-buckthorn (*hippophae rhamnoides*, etc.).

Main activity in the forests is executed by *leshozes* (State forest farms, established during the Soviet Union period with the same structure and almost unchanged ways of management). *leshozes* (46 in Kyrgyzstan) are State enterprises, implementing the management, productive, protective and silvicultural functions, used to work by the plans from the state with provided budget. Economic transition caused the cut of the budget with the remaining plans, resulting in a big crisis for *leshozes*.

Same economic conditions have caused the increase of the human pressure on the forests expressed in uncontrolled cattle grazing, illegal fellings and firewood cutting, inflicted substantial damages to the forests. To motivate the local people for forest development and conservation, some first efforts of introducing community forest management are being taken by the Kyrgyz-Swiss Forestry Support programme.

Forest legislation of the last decades prohibiting fellings in the forests did not promote the forestry development either.

To soften the problems related to the changing policy and economical environment and to make forestry more adapted to the transition to market economy (introduce commercial approach, bottom-up planning procedures, stakeholders' participation, link with private activities), there was a need for a revised policy and strategic planning.

New policy needed precise relations with the local authorities and the local population, to be based on co-operation and democratic principles; to define the need for a technical adaptation guaranteeing a better link between conservation and use of the forests; to overcome organisational limits and the outdated management structure (excessive centralisation, heavy bureaucratic system) and improve the unadapted legislation (too much repression instead of incentives) excessive control from the powerful and controlling structures.

To achieve the above defined tasks of the elaboration of a new forest policy, the analysis of the current situation in the forestry in Kyrgyzstan was prepared during the first half of 1998, stressing the limits and potentials of Kyrgyz forestry sector.

2. PARTICIPATORY PROCESS FOR FOREST POLICY FORMULATION

2.1 Methodology

In general, the preparation of the concept was based on the participatory approach with the aim of reaching a compromise negotiated between the State and the stakeholders, by exchange of opinions of the participants of the process.

To initiate the process and to guarantee the commitment and involvement of all the related ministries, a National Forest Policy and Legislation Commission, headed by the Vice Prime Minister of the Kyrgyz Republic was established with the participation of deputy ministers of Water and Agriculture; Justice; Nature Conservation; Finance; Forest Research Institute; agency of Land Resources and Forestry Agency. Such a high level of participation has helped to promote the process. The National Commission has approved the analysis of the present situation i.e. the Forestry sector of Kyrgyzstan and presented it to the President of Kyrgyz Republic during the International Conference on Forest Policy.

Permanent Working Group with the representatives from lesхозes, State Forestry Agency, Ministries of Nature Conservation, Justice of Forest and Walnut Research Institute was formed to guarantee a broad representation of interests concerned. The working group was engaged in the discussion of the policy measures and results of the workshops. In the long run, the group was responsible for the preparation of the analysis of the current situation in the forestry sector in Kyrgyzstan and the forestry concept on the basis of the analysis.

Participatory process both for the preparation of the analysis and for the elaboration of the concept has promoted a more active involvement of the ministries not directly related to forestry, which helped in the discussion of issues without provoking conflicts (e.g. fellings). In future such a process could promote a more formal involvement of the concerned agencies in the implementation of the jointly defined policy and used as a tool for a solution of more disputable questions and further involvement into the process of all the parties concerned.

As the objective of the participatory process of policy formulation was to define realistic objectives based on the knowledge of the existing constrains and potentials, a number of workshops was held at different levels to collect ideas and opinions at a

broader scale. In the course of the workshops not only actual problems were discussed, but also objectives for the forestry sector in the new economic and political environment and possible policy means and strategy to achieve important objectives.

The analysis of the present situation in forestry was the basis for the concept, defining the constraints and opportunities of the present forestry in Kyrgyzstan. Due to the variety of the interests of different stakeholders, it has never been the aim of the process to reach a full consensus both in analysing the situation and future development possibilities. Ideas, collected during the process were generally classified as:

- a) evident for everybody;
- b) disputable but with a possibility for a compromise; and
- c) disputable without any possibility for a compromise. The main emphasis was given to the first two with possible balance with the third group of ideas.

2.2 Steps in the process

The whole process was based on a sequence of different steps:

Clarification of issues, challenges and principles. In 1997 when the preparation of the analysis was formulated as an objective, a general set of issues and a frame for further debated were defined.

Collection of different ideas. Over the winter 1997-98, participants of the working group, representing various agencies and stakeholders, were informed about the process and the general procedures, and in the course of individual interviews gave their first opinions, thoughts and ideas.

Discussion. The collected ideas were analysed and presented during a workshop in March 1998 with a broader participation, to be precised, corrected, amended and modified. More than 50 persons participated in this meeting. During this workshop, the related issues were for the first time to be separated into categories i) evident for everybody; ii) disputable issues with possibility to a compromise; and iii) disputable points without any possibility for a compromise.

Field trips and discussions in the field. The results of the 1st workshop showed the need for collecting of additional elements, especially at the local level, poorly presented during a centralised workshop. So, in the course of the first part of 1998, a number of minor workshops in different parts of the country, together with discussions with resource persons, gave a more comprehensive view on the present situation in forestry *Collection of statistical reports.* Data from statistical and actual reports were collected and systematised.

Working group. The aim of the working group, prepared during the winter, was to reach a compromise while analysing all the data and information, collected during the workshops, discussions, field trips and study of existing documentation. Based on these, the group has prepared the first draft of the analysis, which was finalised by The Forest Policy National Commission, established during the March workshop.

International Conference on the New Forest Policy. The final draft of the analysis prepared with the involvement of the main parties concerned. Representatives from *leshozes*, local communities, State Forestry Agency and the Ministry of Environment was presented during an international conference in September 1998, in the presence of the President of the Republic, and was approved by the conference.

Working methods. During the workshops the work was based on cards, written by the participants, expressed on boards and discussed during meetings. Such a method gave the participants the chance to the free expression of their individual opinions and promoted the discussion to the point, after everybody was given a chance to express oneself. For the working group was also easier to process the results afterwards. During the field trips and meetings with resource persons interviews, questionnaires and discussions were used.

2.3 Constraints of the process

The participatory approach in general and mainly in policy formulation was an absolutely new experience for Kyrgyzstan, so it was not always ideal and often did not go as it was planned. The reasons could be both objective and subjective:

Psychological. People involved in the process were not always ready to a participatory approach and free expression of their opinion. Representatives of governmental structures were not easily accepting ideas from the field.

Organisational - Institutional. Last minute changes of the plans often occurred due to the inconsecutive involvement of the responsible persons at different levels. The permanent need to speed up the process was explained by permanent political and economic changes.

Documental. Existing reports were not always consistent, and had often contradicting figures. The accuracy of existing data is often disputable, as the inventory methodology applied was elaborated not for the mountain forests.

2.4 Conclusions of the process

The forestry development mechanisms and structures in Kyrgyzstan are currently not adapted for political and economic changes in the course of the transition to market economy. There is a need for a re-definition of the role of State and a new model of forest management, aimed at multifunctional forest use.

The decision taking procedure should be revised, allowing a broader participation of the stake holders. Existing legislation is to be revised and adapted to the actual needs of forestry. At the same time there are positive factors: strong administrative structures in forestry, high professional level of the foresters of different levels.

During the workshops, organised with an idea of getting objective realistic information, it should be kept in mind that a moderator can easily influence the participants and direct their reactions. Sometimes it can contain a certain risk, so carefulness is required at this stage.

Based on the results of the analysis and discussions at different levels held during many of practical workshops over the rest of 1998, by the beginning of 1999 the Kyrgyz Forestry Concept was prepared, to serve as the basis for the Forestry legislation and planning after being endorsed by the Prime Minister of the Republic. The concept elaboration was based on the same participatory approach, supported by the experience, gained during the analysis preparation, and though it did not help to avoid the above mentioned constraints, this process went much smoother.

3. NEW POLICY GOALS

The Kyrgyz Forestry Concept is based on the necessity to achieve 5 essential and complementary goals considering available human and financial means

Ensure the sustainable management of forests

Bearing in mind the fact that the majority of the forests of Kyrgyzstan are over-mature, it is necessary to elaborate and implement new strategies in silviculture (including forest regeneration and complex fellings, promoting natural regeneration and juvenation of the forests, improving their protective functions.)

For the future increase of the national potential in wood production, industrial silviculture should be developed by planting fast-growing species.

The multiple use of forests and forest lands which is not conflicting with forest management will be introduced. The increase of production and processing of timber and non-timber products will satisfy the national needs.

New methods of forest pests and diseases control should be introduced with priority given to biological methods. Forest protection against fires and illegal fellings and cattle grazing should be strengthened.

Considering this challenge, the role of science should increase and get a more applied character.

Improve the management of *leshozes*

The existence of *leshozes* is a necessary condition for the forestry development in Kyrgyzstan, thus the state should promote the development of their economic independence. This is one of the priorities of the forest policy, for this could be a real way towards the economic rebirth of mountainous regions, by creation of new jobs and overcoming poverty, The *leshozes* must become centres for the development of new economic relations, new forms of forest use and economic activity. Thus, new economic relations can transform forestry into the branch of top priority in the country. Institutional and functional reforms need to be brought into the *leshozes* management.

New rules in managing and marketing forestry products and services, including a system of forest valuation and pricing based on market principles, will be established for a better financial balance. New appropriate accounting and managerial procedures will be introduced to promote effectiveness and creativity in the work.

The economic independence of *leshozes* will be considered as the main basis and incentive for its activity. To encourage initiatives, the economic independence of

leshozes will be promoted, and the personnel, being on the state service, will execute only those tasks which could not be attributed to privates without any risk.

Associate local population and stakeholders to forestry development

The development of the forestry sector in the country will also be based on a sincere and complete association of people to forestry interventions. The Kyrgyz Forestry Concept provisions the participation of stakeholders in the management of the forests in the country.

There should be a transformation of the people's consuming mentality towards the forest so that the population would realise that nature conservation needs the participation of everybody. Collaborative forestry management should be promoted as a foundation for the development of self-employment in rural regions and overcoming the poverty of the rural population.

The Kyrgyz Forestry Concept is intended for all the people interested in forestry operations. As long as the State is the only responsible for the forest management and ownership, it is necessary to promote the active participation of individuals or groups in the private sector, in accordance with the government policy of land privatisation and land reform.

A system of leasing of some parts of the State forests will be introduced. This will increase the awareness and willingness of the rural population to protect the forest resources. The participation of the public in forestry management will ensure economic and social benefits from the forests.

Promote private activities

In a market economy, the main production activities are conducted by private individuals or groups, and the forestry sector is not an exception for that.

Some types of forestry works can be given into private hands, under certain technical and socio-economic conditions guaranteeing sustainable development for the future.

Intensive development of industrial forest by private planting of fast-growing economically valuable species could be a way to overcome the forest raw material dependence of Kyrgyzstan, especially for construction needs. To achieve this goal, a seed bank should be created and nurseries should be developed to provide saplings according to the market demand. Encouraging a network of private nurseries is a priority for the national forest policy.

Private initiative is also needed for the implementation of all kinds of material tasks of harvesting, skidding and processing of timber and non-timber products. As the final aim is the selling of the products in a market, only private structures can have a market-orientated strategy. Private units devoted to such tasks are to be clearly encouraged at the legal level. Together with the public efforts towards forestry development they will constitute a supplementary and complementary dynamic element.

Redefine and strengthen the role of the State in the forestry sector

As private activity will have a leading role in the future, the role of the State, which is still essential in forestry field, has to be changed: not less State, but better State. It means to strengthen the role and responsibility of State bodies in the implementation of forest policy, state control and monitoring of forestry branch in general, whilst restricting bureaucracy, excessive centralisation and ineffectiveness.

The national forest service will be maintained with a permanent staff, and with changed functions and tasks related to the new goals of the national policy.

4. FUTURE STEPS OF THE PROCESS

A new Forest Code was to be elaborated based on the forestry Concept, to replace the old Code, approved in 1993, without the consideration of the changing economic and social environment and transition to the market economy. Due to the fact that both Presidential and Parliamentary elections are to be held early in 2000, and the possibility of early elections, the forestry authorities in Kyrgyzstan have asked for speeding up the process. The changed schedule has definitely influenced the general participatory approach, but efforts were made to keep the consistency with the main goals and objectives defined by the Forestry Concept. The following 10 strategic lines, based on the analysis and defined during the workshops, were put down as a basis for the new Forest Code:

- Protect all the forests in the country
- Define technical norms for sustainable silviculture, harvesting and planting
- Execute the economic reform of leshozes
- Stimulate private activities through regulatory and economic means
- Elaborate a system of leasing of national forests
- Ensure publicity on forestry for the public
- Rationalise the forest service structure at regional and national levels
- Improve the foresters' status
- Enforce education and research
- Establish an effective funding system for forestry.

During the next months, this process will continue through the elaboration of a national plan based on the regional definition of priorities. The objective of the planning phase is to give a precise content to the defined strategies. The planning phase will still be based on participatory approach with discussions of the limits of the former planning system, necessary changes and a new frame. But, as the main information was already collected during the other stages of the process and due to a more technical feature of planning, there will be specially trained group mainly engaged in the process, with a broader public involved for information and consultations. Such an approach would promote efficiency and consensus.

The participatory method will be changed for a more technical involvement of the forestry staff in preparing the decisions to be based on a consensus regarding the implementation of the policy. Workshops will be held for the final verification if the proposals for decisions are acceptable for the stakeholders involved in the first step of the process.

The expected result of all the procedure is a Kyrgyz national forestry programme, based on an inter-active planning of means, opposite to the former planning of the results only. The plans will replace the traditional socialist plan which is to be fulfilled by the beginning of 2001.

On the whole, the participatory approach in the process of the elaboration of a new policy for the forestry sector, though related to a number of difficulties and constraints, seems to be the only possible for a society in a transition to democracy and economy oriented towards market relations.

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II

FORESTRY AND RURAL DEVELOPMENT

REGIONAL DEVELOPMENT THEORIES IN FOREST-BASED DEVELOPMENT

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ABSTRACT

This paper elaborates upon the nature of the forest sector and categorises regional development theories. The emphasis is on the evaluation of the development theories and their applicability to forest-based regions. It is shown that important causal factors explaining regional development have varied in the course of time during the last decades. The paper presents 12 regional development paradigms and concludes that the following strands of theories are currently important and topical: the theories of technology and innovations, theories of innovative milieux, institutional approaches, supply-side theories and the theories of human ecology and environmental management. These topical theoretical approaches should be taken into account when doing regional development research and planning in forest-based regions. It is concluded that regional development theories may help to understand the problems and opportunities of the forest sector and, hence, they are powerful tools for designing the strategies of forest-based development.

Keywords: development theories, regional development, forest-based development

1. FROM A SHORTAGE ECONOMY TO THE INFORMATION SOCIETY

Regional development paradigm consists of the various explanations of development. The combination of the important causal factors of regional development has varied in the course of time in Europe. This evolution of theoretical thoughts reflects the gradual transformation of the society, e.g. from industrial to post-industrial, from the society of shortage to society of affluence, from protectionism to free-trade, etc.

The forest sector operated in rather closed nation-states in Europe in the 1950s. At the post-war times, the crucial issues were the acquisition of raw materials, the workforce issues, constructing infrastructure (such as roads and waterways) and financing investments in the forest sector. Thus the physical, social and technical conditions of

that time were considered crucial prerequisites for regional development. These practical bottlenecks of development were also reflected to the theoretical thoughts of regional development. Regional development was part of both industrial reconstruction and the mobilisation of natural and human resources in each country.

Since the 1960s, the awareness of development problems was awakened within countries and internationally, and regional policy got a stronger hold in Europe. The key issue was to direct the growth of economy towards less-developed, often agrarian, regions (Palo 1988). The main doctrine of forest-based development was established according to the lines of the interindustry economics and its theories of employment and income effects for several decades. The approach did not deal much with innovations and regional dynamics. The reason for this was obvious. The main focus of policy-makers was in investment decisions of the conventional high-volume production, not so much in the market and technical changes. Small companies became considered later, often after the main investment was done or under separate rural development schemes.

A variety of new factors in regional development was discovered in the 1990s. Lively discussions on globalisation in relation to local problems took place (Amin and Thrift 1994). Many culturally-bound issues rose as critical factors in explaining regional development of the post-Fordist society. In parallel, many recent development problems in transitional countries were explained by cultural and institutional reasons. Enterprise networks and industrial clusters became the key words in interpreting the successfulness of economic development. This still prevailing strand of theory included the forest clusters as well (Lammi 1996).

The cluster approach has many logical similarities with the traditional linkage-based argumentation (cf. Palo 1988), but the recent approach is less technical than the earlier one and is based on enterprises' networking and on the attributes of social capital (i.e., for instance, people's enhancing their know-how by interaction). According to the recent mainstream approach, development is crucially dependent on cultural assets and know-how and that reasoning has introduced the concepts of learning regions and dynamic competence. In practise, European peripheries have been boosted by the structural funds of the EU. Money have been put to both soft (e.g. training) and hard (e.g. roads) infrastructure.

The rise of information technology has been increasingly proven crucial leading to the organisational and spatial reformation of the society (Agres et al. 1998, Castells 1989). From the forestry sector standpoint, the rise of the Information Society may indicate growth without the trend-like increase of paper consumption, and, for instance, the rise of the aesthetic values of forest landscape. A growing interest has focused on the new economic order of coming socio-economic systems. The Information Society replaces gradually the Fordist society. For instance, cyberspace, virtual communities and virtual regions are envisioned as new parts of the human action spaces (Agres et al. 1998, Komito 1998). Certainly the new ways of work and every day life have impacts on the organisation of the forest sector. The value of forest may be perceived differently, depending on time and location (Kennedy and Thomas 1996). People's housing preferences may also change which means that the value of landscape and recreation are part of the optional use of forest land.

2. THE MULTIFACETED NATURE OF THE FOREST SECTOR

The forest sector is a rather complicated and multifaceted economic system. Its products, production technology and the scale of production vary considerably. Furthermore, the forest sector operates in different institutional environments. For instance, forest legislation varies by country and the mode of forest ownership is country-specific (Hyttinen et al. 1999). People's values differ, forest may be perceived as part of a rare landscape, or in contrast, as the source of raw materials.

The forest sector consists of a set of actors bound to a geographical space. High-volume forest industry is located in the advanced industrial countries, and raw materials are also obtained from the same geographical regions. As much as 73% of industrial roundwood and sawn timber was produced in the developed part of the world (North America, Western Europe, Oceania, Eastern Europe, FSU and few other countries) in 1994, and the share of Western Europe was 17% respectively. Developed countries produced 90% of wood pulp and 79% of paper and board in 1994, the share of Western Europe being 22% and 27% respectively (van Kooten and Vertinsky 1999). The big four in the forest sector are USA, Canada, Sweden and Finland. Economically unused forests are mainly in the tropics and Siberia.

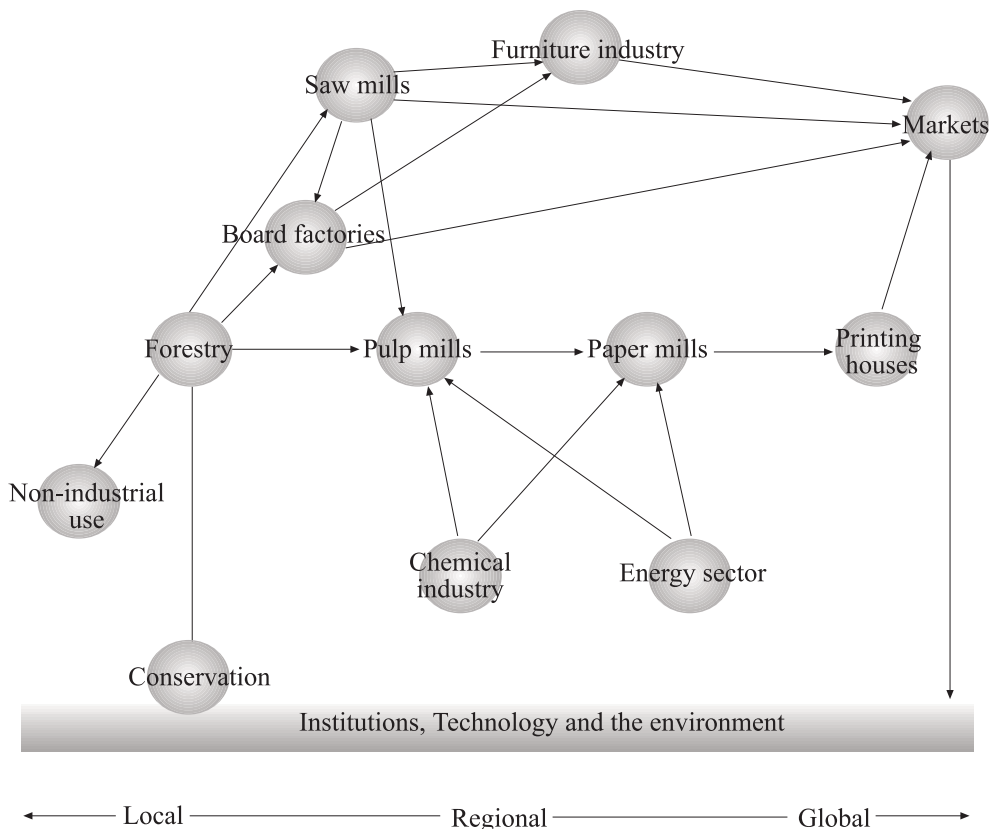


Figure 1. Actors in the forest sector and the environment.

In Figure 1, the advanced forest sector consists of the use of forest for industrial use and conservation. Part of the forest may remain unused or part of it may be in a non-market use. The destination of roundwood is to mechanical wood-processing and pulp production, and the products go finally to markets. The forest sector comprises an interdependent production system with production links to the chemicals industry and energy production. To operate efficiently and profitably, this production system requires a suitable techno-institutional milieu. A suitable societal environment consists of institutions which encourages the economic use of forests. Such are, for instance, stable land ownership conditions and the taxation system which encourage the use of forests (Framstad 1996). To be competitive, the forest sector requires appropriate technologies. Industrial capital must consist of the advanced machinery and equipment. Moreover, traditional parts of this technology package are, for instance, roads, railways and harbours. And, finally, forestry must be environmentally sustainable in order to produce wood from a generation to another. Some attributes of forest are regarded as public goods which means that the optional values and uses of forest, such as forest as a recreational asset, a park or cultural heritage, the home of wildlife, etc., should be taken into account.

Some parts of the forest sector are very local, such as harvesting or sawmilling. They are regarded as local matters from the standpoint of income and employment effects. Forestry is basically a very local activity if forests are in the ownership of the locals. Forestry has the major impacts on households and villages. As development programs deal with the forest industry – sawmills, pulp mills, etc. – such investments have been traditionally considered crucial for regional development. Nevertheless, companies make the final decisions of production and investments. Although companies have the last say, development is still of a regional interest and can be regulated to some degree. The sufficient amount of raw materials, the impacts on environment and the multiplier effects of income and employment are considered regional. Regional authorities have been in a central position when attracting investments into a region. At least from the standpoint of major producers, if dealing with the final products such as paper and sawn timber, the action arena of competition is often global. Products face with the international competition, and the environmental concern comes from global sources. The logistics and sales takes place at the global scale, and research and development and investments have also a global reach.

3. PRODUCTION TYPES

The forest sector possesses a variety of locational geographical patterns. It can form an agglomeration, such as forest industry communities, or maintain a very scattered settlement pattern. Or, some parts of the forest sector as printing houses can be located in a metropolitan environment. Forestry is an areal mode of production often based on scattered settlement structures in countries where small farming and farmers' forest ownership are dominant. Other forest industries, such as saw mills, pulp mills and chip board factories, usually create a town-based regional structure in the form of villages and industrial towns. Corollary, the employment and income effects of the forest-based

production are different, leading either to the dispersion of forest income to rural, scattered settlements, as it is in the case of farmer-owned forest income, or to agglomeration and industrial capital funds, as it is in the case when a forest-based production unit operates in a town and is owned by non-locals. Forestry may lose a considerable part of its rural spin-off effects of income due to the shift of the forest ownership from farmers to urban dwellers and companies. The objectives of forest owners may diverge considerably at the regional scale (Karppinen 1998) leading to different uses of forests. The motives of the use of forest vary also by ownership type, country and generation (van der Ploeg and Wiersum 1996). Hence, the structure and dynamics of the forest ownership have spatial implications.

From a standpoint of a forest industrial company, resource industrial communities (sawmill and pulp and paper mill communities) increasingly consist of a network of social entities of the company split into several localities. A shared interest in the forest business maintains the social network in which they are collaborating. The factors forming such a forest industrial community are a common economic basis which induces a social network. As an example, the settlement pattern of forest-based regions, generated by resource-based industrial activities, has consisted mainly of a network of forest industrial communities, determined by the location of saw mills, pulp mills, and other wood processing plants. This network has become multilocal and multinational when companies have merged and commenced to operate at the global scale. Forest industrial regions can also be based on smaller, more locally-oriented, companies as it is the case many densely populated areas in the Southern Europe.

The actors in forestry may vary considerably by region or even by locality. The key actors can be (forest) farmers, foresters or harvesting or timber companies, or a state as landowner. A Russian harvesting-company-based settlement pattern has resulted in the network forest villages. This Russian model represents the most concentrated way to organise forest work geographically. Forestry, in countries where land-ownership is dispersed and owners usually take part in harvesting, has generated a more dispersed settlement pattern, earlier being closely linked with agriculture. As labour productivity increases, forestry provides work for a fewer amount of farmers and harvesting entrepreneurs. Nevertheless, forestry sustains the scattered patterns of settlement. Along with the technological progress, rural forest based population is coming more sparse and concentrated in agglomerations. Forest resource communities, which have been an essential part of the rural economies, are incorporated into rural settlement structures, being an inconspicuous part of rural settlement. Advanced harvesting, processing and transport technologies have increased the labour productivity and, hence, less and less employees are needed in production (e.g. Kortelainen 1999, Wibe 1995).

Rural forest resource communities are integral part of the wider forest industrial network. These networks may vary in composition. Smaller, more local networks, can consist of the supply of wood to construction and furniture industry whereas high-volume mass production comprises large production systems. Nevertheless, even rather small regional forest sectors are linked to supraregional production networks. Products and raw materials are transported cross the borders.

Pulp and paper industry comprises of advanced high-volume fibre processing systems acquiring inputs from the production of other wood products, chemicals, minerals and energy, etc., as Figure 1 depicts. From the national standpoint, it forms, if strong

enough, an industrial cluster in a national economy. Maintenance companies, mechanical workshops, planning and research organisations are part of the that forest cluster. Experts and professionals in forestry, forest industry and adjunct activities comprise the multilocal networks of actors. This kinds of network of actors have become more and more international. Hence, forest clusters have a strong global reach. All in all, each actor (owner, harvester, etc.) in a regional forest sector is linked to the complex web of actors from local to global.

Different actors of the forest sector have different dependencies on their physical and socio-economic environments. The location of the primary producers is fully dependent on the location of forests, and the first parts of production chain are thus transport and raw materials oriented. The industrial complexes of sawmills, chip board factories, pulp mills and paper mills benefit from synergetic advantages (spin-offs from operations together) and agglomeration economies (the collective use of infrastructure). The end of the production chain is market-oriented, in other words consumer-oriented, some production units need contacts to Research and Development more than the others. The orientation towards densely populated areas is the result of the supply recycled fibre to paper-making. Finally, the headquarters and sales offices use to locate in metropolitan areas or benefit from the global cities. Local and regional authorities have not much to say in the locational decisions of the companies. The locational dynamics of the forest sector is self-regulating in that sense that investments regulate the amount of industrial capital in geographical space. The shorter the lifetime of an investment is, the more dynamical is the spatial structure of industry.

The locational decision of a company is a rather complex set of choices and dependencies. Nevertheless, an actor attempts to operate in an economical way. According to the standard economic geographical theory, two types of locational decisions are typical in the forest sector. First, a forest industry company solves the location of its units by searching for optimal location in order to minimise the total costs of production and maximising revenues. Hence, the location is (dynamically) determined by both revenues and costs in the geographical space. For instance, the factory can be relocated nearer to the markets, if such locational choice will increase profitability. In the second type, the actors minimise the costs of operation in situ. For instance, the location of the forest resources and transport networks do not allow any optional locations whereupon the producer cannot improve profitability by changing its location. The latter condition prevails typically in forestry.

Factors engendering locational advantages have changed remarkable in the last decades. Companies have become able to utilise advantages by developing their operations at the global scale. The removal of the barriers of trade and capital flows has led to international co-operation between forest companies, and investments are planned in large, transnational companies on a global base. Institutional and regulative changes (e.g. the development of the EU, foreign ownership, the harmonisation of legislation, the environmental programmes) have been important factors for (re-)organisation of regional industrial spaces in Western Europe and such changes have even occurred in a much larger extent in transitional countries.

The harvesting and production technology are now much more capital-intensive than few decades ago leading to fewer production units. Logistics has also developed leading to the reduction of transport costs. The raw materials and final product markets of the forest sector have faced booms and busts due the Russian turmoil and the Asian crisis. The Russian timber trade has continued but most Russian manufacturers have lost their dynamic competitiveness in the market due to the lack of investments and product development in the 1990s. The Asian crises of the late 1990s postponed many investments to Asia and cut the demand of the forest products.

All commercially-operating forest sectors are fully dependent on the markets where they operate. Signals from the market have forced companies to restructure and develop their production. Some companies have been more successful than others. Current products are not the same products which were produced a decade ago, but their qualitative attributes have been developed. In parallel, new products have been developed and the production of some others has ceased. Also companies have been established and closed down. Hence, the advanced forest sector is very dynamic in nature.

4. REGIONAL DEVELOPMENT THEORIES AND THE FOREST SECTOR

4.1 A broad framework

Explanations of the development of forest-based regions can be backed up by various theories of regional development. Regional development theories comprise a heterogeneous set of theories which describe certain parts of social and economic processes. Correspondingly, the argumentation is highly diversified. The variety of theories reflects the varying emphasis of interests in explaining development, the uniqueness of empirical cases, a certain stage of development, the different intellectual environments and the evolution of theoretical ideas.

Development theories may be grouped into more or less coherent approaches or paradigms. The currently prevailing approaches, with respect to forest industrial communities are discussed in Table 1.

Equilibrium seeking

Abstract economic systems where forces making for change are in balance have captured the imagination of economists and geographers throughout history. Equilibrium is the most economical state of economy which is never achieved in practise but is useful as a concept in understanding the principles of a profit-maximising market economy. Applied to regional development, these normative theories of production and spatial structure assume that investments take place where the returns are highest and labour will flow from low-wage to high-wage regions (Malecki 1991, p. 74-75). The equilibrium seeking paradigm draws attention to the profitability aim of an enterprise under certain quantifiable conditions (Hurter and Martinich 1989; Serck-Hanssen 1970; Smith 1981).

Table 1. Classification of the theories on regional development (Tykkyläinen et al. 1997).

Approach	Basic idea	Policy implications	Applications in forest sector
Equilibrium seeking	Enterprises search for the highest profitability	No measures, except some infrastructural investments	Frequently used approach by forest industries in determining an optimum location for a plant
Technology and innovation	Technology and innovation are sources of restructuring	Considerable input on science and technology	Explains the development of new products and expansion; explains effects of rationalization
Innovative milieu	Region can become an innovative environment creating opportunities	Training and infrastructural investments to support innovations promotion of SMS industry	Explains the success of certain industries, such as the furniture industry in Italy and Denmark
Global capitalism	Capital accumulates to the regions of the highest returns	Reducing the costs of the use of production factors	Explains long-term shifts of forest industries
Regulationism	Emphasises the role of public interventions	The role of state in regulation	Regulation of land ownership, capital, trade and labor varies from one country to another
Institutionalism	Emphasises the cultural basis of society as a fundamental condition for development	Adaptive practices, learning	Behavior, values and the institution of society create the cultural niche where the forest sector operates
Resources and the physical environment	The location and availability of natural resources play a major role in development of regions	Policies to remove physical constraints	Fundamental explanation for the historical development of forest sector
Keynesian application	Emphasises the role of multiplier effects in aiming at development	Policies to create growth centres	Subsidized forest industry investments in peripheries to boost regional development
Product cycles	The optimal location for production unit changes during the life-time of the product	Policy adjustments according to the cycles	Large mills are rather immobile, SMEs are susceptible to product cycles
Supply-side policy	Investments in infrastructure should be encouraged to attract investors	Deregulation, investments in infrastructure development projects, partnerships	Infrastructural factors, such as roads and waterways are considered as crucial factors
Human ecology and environmental management	Environmental factors have an increasing importance in location decisions	Regulation, taxation (environmental tax)	Impacts on investments: recycling, closed production processes, etc.
Environmental concern	The industrial sector should take into account the opinions of various interest groups and environmental preferences	Measures for environmental-friendly development	Explains environmentally-sensitive production decisions and similar acquisitions of raw materials

The spatial (re)organisation of the forest industry is certainly based on the economic principles and profit seeking. The low-cost transport of raw materials and products is important for the operation of the entire forest sector. The availability of labour, energy and water is crucial for the operation, and the costs of these vary depending on the site. Price changes, new raw material sources, shifts in demand and improvements in technology bring about the continuous economic and spatial restructuring of the forest sector. The equilibrium is hence dynamic in nature.

An optimum location of a plant is determined by calculating costs of raw materials, transport and labour. Usually these calculations have been done by the business itself, not by local or regional authorities. This approach has not been very popular in regional policy, because these calculations do not necessarily favour any politically predetermined locality. Furthermore, authorities do not benefit from the profitability of a local plant, and thus they are more interested in the spin-off effects of an investment, such as the impacts of investments on incomes and employment in the region.

Technology and innovation

Innovations have basically been the core of many economic theories, although there have been difficulties to put them into a any formal (e.g. neoclassical) framework (Andersen 1996). What cannot be formalised (and anticipated) it is easy to forget. Hence, innovations are not frequently included in the economic reasoning in a concrete or formal way.

Innovations and progress in production technology are common inducers of economic restructuring, and the role of these factors have been discussed more widely in recent years (e.g. Malecki 1991, Davelaar 1991, Hall et al. 1987, Husso et al. 1997, Kangasharju and Nijkamp 1997). A new, post-Fordist, flexible techno-economic paradigm and an urban environment conducive to development have been regarded as engines in the new wave of development (Freeman and Perez 1988, Brotchie et al. 1991). One of the key European ideas in promoting development has been to create the European system of innovation in the sense that each national system is part of the integrated EU innovation umbrella and programmes (Gregersen and Johnson 1997). Innovations increase the productivity of labour, and such increases in productivity can often explain why forest enterprises downsize labour. Thus, innovations may have a negative impact on regional development in that sense, but they are necessary to keep business viable. On the other hand, innovations are prerequisites for new products and, hence, innovations are – almost always – necessary conditions for development.

The discussion of innovative society has dealt with changes in urban patterns, networks and high-tech industries and some services (Hall 1985, Stöhr 1986, Andersson and Strömqvist 1988, Castells 1996). Nevertheless, regional innovation strategies have been increasingly included in a regional development agenda, and that policy has been intended to rise the innovative capacity of less-developed areas (Morgan 1997, Masser 1989). Advanced technology can provide opportunities (such as new production) for keeping people in rural areas and help to maintain settlement patterns according to the preferences of employees (Richardson 1997). Nevertheless, the impacts of information technology seems to be controversial (Bar-El and Felsenstein 1989, Oakey and Cooper 1989, Segerstahl and Jussila 1989, Grimes and Lyon 1994).

Innovative milieux

Lively discussions of innovative milieux have prevailed in recent years (Stöhr 1986, 1987, Malmberg et al. 1996, Maskell and Malmberg 1995, Wilhelm 1997). This approach originates from the Marshallian concept of industrial districts from the end of the last century (Simmie 1997). The argumentation rests on that a locality or region itself can become an environment which is innovative, and many scholars have referred to the opportunities to develop SMS-industries and craftsmanship in relatively peripheral areas (e.g. Camagni 1995).

The development of forest sector is dependent on high-tech applications. Especially pulp and paper production plants are high-tech-based and expensive and require large investments. Some very specialised industrial alliances of machine works in the world develop the modern technology in the field of the forest sector. Forest industrial companies are familiar with advanced technologies and process steering, but instead of being developed 'locally' they are increasingly developed nationwide or worldwide. Industrial milieux can comprise of global networks but possess local ties in the form of employees and raw materials (Dicken et al. 1994). The situation of the forest industry is comparable to the one of the mining sector (Liljenäs 1992, Tykkyläinen 1996). Hence, the spatial extent of such learning regions can vary greatly, from local craftsmanship to the few world-wide networks of expertise.

Some branches of the forest sector, such as the manufacture of furniture, may benefit from a development policy of local, innovative milieux based on small firms. For example, furniture industry regions in northern Italy can be taken as good illustrations of these (Merlo and Fodde 1996). The Finnish expertise in machine works relies on the successful combination of actors in Research and Development, machine building, automation and contacts to customers.

Global capitalism

Various theories describe the global process of the accumulation of capital and its implications for the spatial organisation of production (Wallerstein 1974, Fröbel et al. 1980, Thrift 1986). The development of a particular region is a result of the combination of its changing role in the global economy, distinctive history and resource endowment (Massey 1984). The interpretation that the entire vertical process of production, from resource extraction to the final product, being subdivided into subprocesses which are assigned to whichever part of the world can provide the most profitable combination of natural resources, capital and labour, appears to be relevant, as forest companies become transnational.

The theories of global capitalism as such explain, at best, the macro trends of development and the spatial fluctuation of production (Smith 1990). The approach seems to be useful in explaining the global long-term shifts of the forest industry (e.g. chip board production). The current interest of forest industry companies investing in the Far-East and South America can be explained by this sort of search for profit by capitalist actor on a global scale.

Regulation theory

Regulation theories argue that the main forces for socio-economic changes occur within national economies and that the world economy consists of relations between national

economies and is shaped by the national basis rather than by rootless capitalism (Aglietta 1979, 1982, Lipietz 1986). Regulation theories emphasise that structural changes can be explained by the nation-specific mode of production and by shifts towards new modes, such as post-Fordism, in order to guarantee the accumulation of capital. Much research has demonstrated a greater readiness to address the social and institutional regulation of regional spaces as well (Collinge 1999, MacLeod and Jones 1999).

Along with advances in production paradigms and with the lessening of state intervention, the traditional modes of resource extraction and production are both under pressure to renew themselves. The reshaping of regions and regional organisations has changed the modes of regulation also at the regional level. Communities are outcomes of 'flexible accumulation', 'recycling of regions' and geopolitical struggles (Harvey 1987, 1989, Soja 1989). Communities face a spatial reorganization of resource production. The geographical differences of environmental regulations may contribute to industry relocation and changes in trade patterns (Tomberlin et. al. 1998). Thus, development varies by nation and region. The Nordic forest sectors have been successful despite of the deregulation caused by the incorporation of Finland and Sweden into the EU. Regulative practices can also hinder development as the Russian experiences show (Åslund 1997).

The forest sector consists of differing regulative practices. For instance, land ownership differs by countries (i.e. companies, individuals, farmers or state as owners). Furthermore, the composition of the wood-processing sectors (i.e. large- or small-scale sawmilling, the manufacture of furniture, boards, etc.) differ not only according to the attributes of the supply of wood (i.e. quality and quantity) but also due to the country-specific institutions and legislation and the cultural and industrial legacy of a region. At the local level, the idea of 'spatial selectivity', presented by Jones (1997), can be applied to processing forest industries. It would imply that the state has a tendency to privilege certain places through various state projects and regional policy instruments, as has actually occurred in Europe (e.g. Sachsen Papier in Germany). Hence, the modes of production are far from being only global in various branches of the forest sector.

Institutional approaches

Restructuring also results from the cultural basis of society. There are a variety of definitions of institutions. North (1991, 97) and Amin (1999, 367) define formal institutions as constitutions, rules, laws, property rights and organisations and informal or tacit institutions as individual habits, customs, codes to conduct, group routines and social norms, values, sanctions, taboos and traditions. Economists define institutions narrower as a rules of the game (such as market economic principles) (Róna-Tas 1998). Besides values, attitudes and cultural heritages as such, regional development is organised via the structures of power and authority in society (Friedman 1973, O'Neil 1992, Lash and Urry 1994).

Forest industries and their geographical patterns are affected by the cultural environment of the society. Unresponsive attitudes towards forest businesses or a heavy bureaucratic legacy, for instance, may hinder the development of the forest industry in a region or country. Countries where the forest sector has a significant role have developed their legislation and organisations to favour a certain type of forest utilisation.

A great number of organisations which operate in this field have created an institutional capacity to make a competitive forest-based economy. Hence, development is dependent on associationist solutions, meaning a variety of actors which foster formal and informal institutions for development (Amin and Thrift 1995).

The transition to Nordic forest technology in Russia provides an example where the western forest industry has faced this contradiction between the local way to work and the institutional setting of Russia (Sigurdsson et al. 1995). Furthermore, socio-personal characteristics and motives influence decision-making in resource sectors, e.g. wood-processing (Kortelainen 1998) and farming (Ilbery 1978). Similar points seem to be relevant in forestry and in the behaviour of forest owners when they argue how to utilise forest as a resource (Karppinen 1998). Forest may also be considered strange as the example from Ireland shows. Massive field afforestation programs in Ireland have faced opposition from farmers as they have been reluctant to afforest because of their resistance towards forested landscapes.

Resources and the physical environment

The location of a natural resource offers opportunities for establishing resource businesses on it, while the threat of natural hazards is a risk for businesses. The location of forest businesses can be considered from the standpoints of forest inventories and physical attributes of a region (Kuusela 1994). This is usually the first stage of development planning. Climate, soil, access, location of deposits, etc. are physical factors influencing the location of forest businesses, and these factors have been a fundamental research domain in forest sciences.

The relationship between physical and economic margins is a complex and dynamic one, and constitutes a central issue within the approach. The physical environment has very different properties varying in space with each resource having its own system of exploitation and occurrence on the earth (Miller 1979, Cutter et al. 1985). There would be no production without surveys and a subsequent knowledge of the possibilities offered by nature. On the other hand, this approach is not a sufficient argument for establishing any wood-processing industries, for example, successful furniture industries in Denmark are not based on local wood resources.

Keynesian applications

Popular paradigms in the 1960s and 1970s emphasised growth centres, propulsive industries and multiplier effects (e.g. Darwent 1969, Tolosa and Reiner 1970, Hansen 1972, Moseley 1973, Buttler 1975, Gore 1984, p. 81-117). This approach pointed out the interindustry linkage effects of the forest sector. It was central in explaining development of the forest-based regions and in introducing policy recommendations to less-developed areas where the forest sector was considered as development potential (Palo 1988). This approach, based on the Westboy's (1962) paper, was the mainstream doctrine in forest economics for a long time.

A typical example is the calculation of employment and income effects of hypothetical pulp and paper production complexes on a regional economy (Karjalainen and Tykkyläinen 1979). The interindustry linkages approach is most appropriate for analysing the short-term effects of a shrinking basic sector on the production level of the local economy. Many regional policy measures incorporating subsidiary and redistributive elements contain rudiments of Keynesian-based theoretical constructions.

Product cycles

Theories consisting of spatial manifestations of product cycles explain economic activity within regions in terms of the knowledge requirements of production during a product's life-time. The product changes from being innovative to being mass-produced and the product is initially manufactured in knowledge-intensive areas in its early phase and outside the cores in later phases (Norton and Rees 1979, Dicken 1988). This model works in the explaining the diffusion of growth waves from developed countries to less-developed (Korhonen 1994).

Relocation processes are of minor significance in the forest industries because the primary production system is immobile. Furthermore, the equipment of large mills is not easy to transport, but in the mechanical wood processing sector this relocation can take place. Old machinery can be relocated to a developing country, for instance, where production can be commenced.

Supply-side policy

According to those who emphasise the role of supply-side factors in restructuring, major rigidities in market conditions should be ameliorated and removed with the aim of creating a more flexible economy (Chisholm 1990). Prices, exchange rates, incomes and the allocation of investment capital should all be determined by market signals (Welch 1993). Instead of a redistribution of the national wealth between regions and communities, as practiced in Keynesian regional policy, infrastructural investment, deregulation and an opening up of the regions to competition should be encouraged. The advantages or benefits of competition among countries is often the underlying idea behind the argumentation.

According to this approach, the contribution of infrastructure is an essential condition of production. The forest sector usually benefits from this policy greatly. For example, factors such as transport costs, communications, information superhighways, access to Research and Development activities and labour skills, have all been regarded as factors influencing development (Andersson et al. 1990, Vickerman 1991). This discussion has not much dealt with the forest-based regions but has centred on urban development during the recent years. Many European rural areas have benefited from the EU funding targeted to the less-favoured areas. Infrastructural factors such as roads and waterways are crucial for remote resource extraction, and improved telecommunications are a necessary condition for new organisational structures.

The newest wave of the construction of new infrastructure is the investments in the telecommunication and the Internet sector. The Information Society makes more flexible organisations possible, and a telecommunication revolution is on its way. It is leading to the telematic (remote) control of production and logistics, production automation and almost unlimited transfer of data over the geographical space. This transformation is clearly one of crucial aims of development in European Union. This approach is both theory and policy.

Human ecology and environmental management

Environmental management has its roots in the growing interest in applying principles arising from human ecology and environmentalism (Hägerstrand 1993, Buttner 1998). Restructuring in resource communities is increasingly being influenced by public

resource management, environmental control and environmental impact assessment (Rees 1990, p. 277-445, Mitchell 1989). Environmental planning (e.g. EIA) has become a routine matter. This kind of ecosystems management combined with dialogues with stakeholders has been considered much to offer for solving the forest conflicts (Elliott 1996).

Various theories have been developed to deal with environmental goods and externalities (e.g. Bowers 1997, Tietenberg 1996). Legislation and penalties are implemented in order to improve the sustainability of the economic-environmental system and, at the same time, residential preferences are becoming increasingly sensitive to environmental factors which shape the structure of the community. Ecosystem-based management is increasingly replacing the more traditional multiple-use forest management (Kennedy and Thomas 1996). Decisions on the use of forest resources and technology are influenced by the criteria of sustainability, ecosystem rehabilitation and protection.

Environmental concern

The emergence of environmental movements is traced back to the 1960s, when pollution caused by the forest sector was the main concern in industrialised countries. The societal nature of environmental concern has been discussed at great length in geography (e.g. O'Riordan 1971, Sayer 1979), but it rose to the public agenda with the growth of radical environmental movements. Forest conservation has a long history, and there is a variety of reasoning for forest conservation (Elliott 1996).

Various measures have developed to reduce the environment impacts of the forest sector, such as recycling regulations and financial incentives, packaging and reuse requirements, technical regulations and standards for product and processing methods and certification (Bourke 1995).

Taxation and infrastructure policy guide the primary utilisation of forest efficiently (Framstad 1996). Debates over forest devastation, the recycling of paper, nature protection etc. have influences (often via customers) on the production decisions of the forest sector. Hence, theories describing and explaining people's relations to nature and the environment have a role when explaining the restructuring of communities based on the forest sector.

Ecological movements are concerned with the preservation of old forests in Fenno-Scandia. That concern has diffused and many customers of the forest companies have adopted the same concern. Theories and discourses related to human environmental behaviour, values and social movements are growing in domain (Jagtenberg and McKie 1997), and are becoming increasingly important for the development of the forest sector.

4.2 The relevance of theories

The above presentation reveals that numerous approaches exist. Each theory covers a certain domain of regional development processes, and that theory can be supported under certain conditions. Nevertheless, such feasibility had to be taken as a sign that the explanatory power of a theory is dependent on societal and economic conditions of localities in a specific time.

This dependency on historical context (i.e. time) can be illustrated more clearly by taking an example from a longer period of time. When steam technology penetrated to the forests of the U.S.A. and forest workers were pioneers moving to the West in the late 1800s, the key issues of regional development were totally different compared with the development issues high-volume pulp and paper industry of today. Thus, the theoretical focus of a study can be hardly the same in the both cases.

Geographical differences matter as well. It is also easy to understand that the regional development issues in the province of Alberta (Canada) where forests are Crown forests and the majority of production consists of high-volume pulp production may be totally different than the development issues of Basque country (Spain) where 20 000 forest owners provide 2.1 million m³ wood and the main user in the terms of employment is furniture industry (Luckert 1999, Mitchel 1999). Hence, the relevance of theories are bound to time and place – and finally, the research questions of a study.

Figure 2 depicts the fluctuation of the importance of the various theoretical paradigms of regional development during the last four decades. Although the theoretical legacy seems to be rather speculative, limited and obscure, some strands prove to be more relevant than others at the moment. These cycles of explanation are results of changes in society. At a certain point of time, some matters are more crucial than others from the viewpoint of development. Furthermore, the current emphasis of certain regional development theories is partly a result of practical socio-economic objectives, such as the objectives expressed in the structural policy of the EU. In addition to the academic mission theories are also tools to achieve practical development goals, and such theories which assist to achieve current objectives are considered more valuable than others on condition that the theories can be verified. When turning to a new millennium the important strands of regional development theories are the following strands of theory

- a) technology and innovations,
- b) innovative milieux,
- c) institutionalism
- d) supply-side theories; and
- e) human ecology.

The regulation theory is still strong, but if institutionalism is broadly defined it can be considered to include some of the regulationist approaches.

Relevance in socio-economic sciences may have additional meanings, denoting, for instance, whether a discipline is related to the resolution of current socio-economic problems or to respond the demands set by doctrinaire governments and companies. The relevance of development theories is here seen as the question in what extent the current mainstreams of regional development theories are of help with answering to research questions, broadly speaking, of academic studies related to forest-based development.

The forest sector is basically like any economic activity ruled by the market forces in the advanced economies. Nevertheless, the forest sector is more than the average dependent on natural resources, i.e. forests, and forestry as an areal production is restricted by the conditions of the nature more than many other economic activities. This specificity of the forest sector should not be exaggerated. The topical theoretical findings should be applied in investigating the development of the forest-based regions. The factors like technology and innovations, innovative milieux, institutions, the

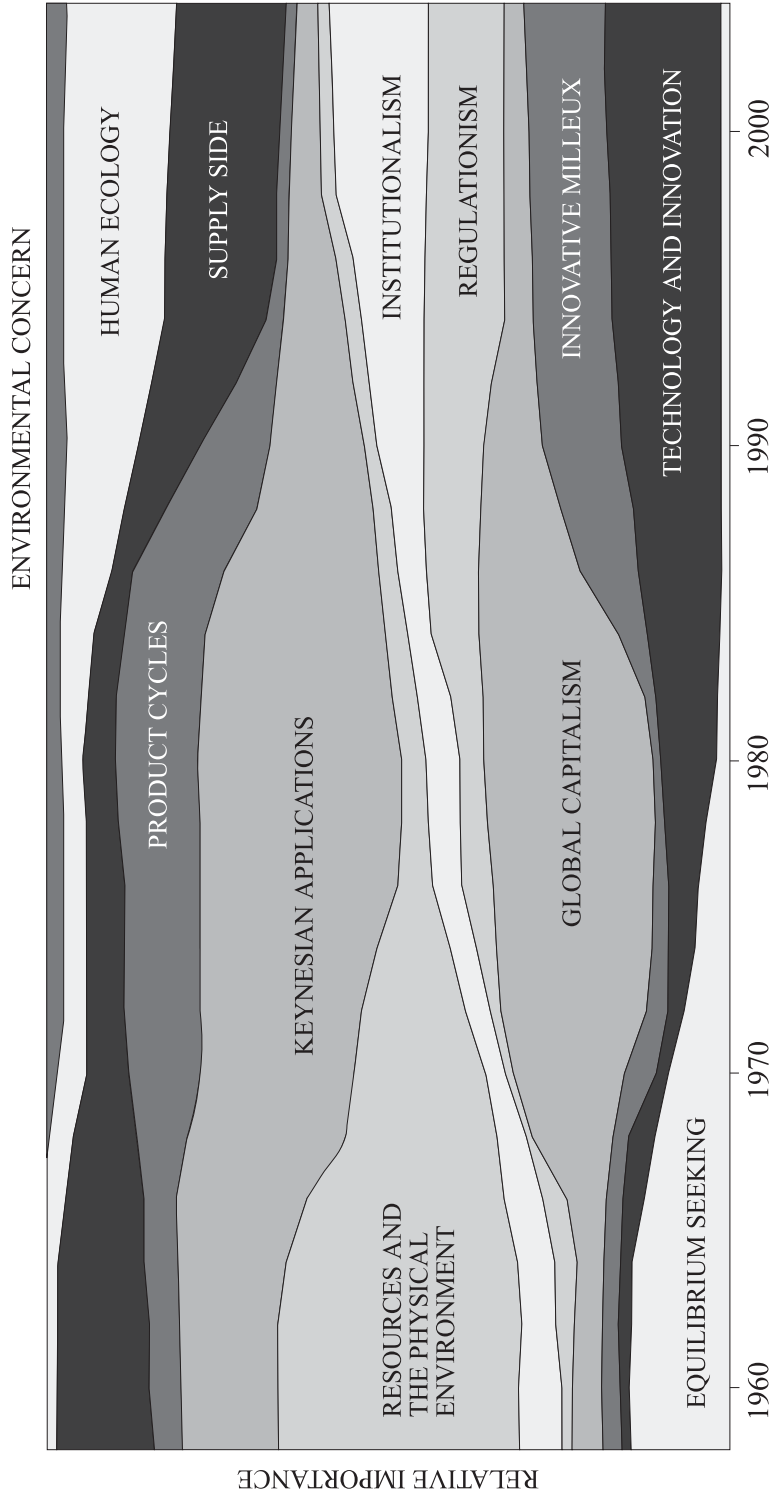


Figure 2. Importance of the regional development theories in the late 20th century.

supply-side attributes of a region and ecological and environmental issues can be hypothesised central in developing the participatory regional development strategies of the forest-based development.

5. LIMITS OF THEORIES

The attributes and significance of forest systems vary by region in Europe. There is no concrete panacea how to enhance the competitiveness of forest business in different regions. The development process is reflexive learning process between actors in each region. Hence, the answers had to be found in each region and case.

The anticipation of regional development as a scientific effort is difficult. Answers to the future questions of the forest-based development are uncertain because nobody knows under which conditions the forest sector will develop in the future. Nevertheless, such attempts have proven to be useful when designing effective regional development strategies. If the range of development options is anticipated so will be the problems as well.

Recommendations can be only speculative but improved by the latest knowledge. Regional development theories, as well as the other theories of social behaviour, may help to understand the problems and opportunities of the forest sector. Such theories are powerful tools for designing strategies as long as the forest-based socio-economics of localities behaves as theories depict.

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EMERGING ISSUES IN EMPLOYMENT AND INCOME IN THE UNITED KINGDOM

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ABSTRACT

This paper examines the principal trends in employment and income in the remoter areas of the UK, with particular reference to Scotland, and focus on those in the forest sector. From an examination of these trends, there will be drawn out a number of themes for discussion, which relate to the rural land-using sector in general and the forest sector in particular. This paper also examines some of the key issues relating to employment change in the rural economy through an examination of the boundaries between rural and urban Scotland, between financial and economic analysis, between production and multi-purpose forestry, between different stakeholders, between different agencies and between research and practice.

Keywords: employment, income, rural land use, production, multi-purpose forestry, Scotland

1. INTRODUCTION

The principal observation that can be made about forest sector employment in Scotland is that it is very low (at less than one per cent of the total rural employment) and declining, especially if the production forestry sector is considered in isolation. Forestry now covers more than 15% of the land area of Scotland but except in extremely localised contexts is almost insignificant as an employer.

In Scotland, forestry is becoming more integrated with other land uses, and cannot be seen as a production sector separate from other demands on land. There is a growing conservation sector in terms of land cover, including land owned and managed by both public, private and voluntary sectors, which often includes forested land, usually natural or semi-natural forest. Also, at a farm level, farm forestry has been promoted actively since the late 1980s and although the achievement in terms of area planted has been modest, these changes are symbolically significant in breaking down a long-standing

dualism. Thus conservation and agriculture now interface importantly, but not always entirely comfortably, with forestry. Forestry also has long been a component part of the large mixed (often sporting) estates that are a characteristic feature of Scottish rural land use. In this sector, the relationship between forestry and the other estate land uses has been more integrated.

2. TRENDS IN EMPLOYMENT AND INCOME IN RURAL SCOTLAND

2.1 Rural restructuring process

Many commentators now talk of the profound changes that have taken place in rural areas of developed countries in the last 30 years as ‘rural restructuring’ and often allude to a change from a productivist countryside to a post-productivist countryside (Marsden 1998). Aggregate data show a dramatic and continuing decline in primary sector employment at a UK level. In the UK, agriculture, forestry and fishing now comprise about 2% of the workforce. In all non-primary sectors of the English economy between 1991 and 1996, rural areas outperformed their urban counterparts (Countryside Agency 1999).

Marsden (1998) has identified four different types of area in the UK with respect to restructuring processes, in which he argues that distinctively different development pressures exist. These four ideal types (ideal in the sense used by Weber and other sociologists) include:

- the preserved countryside, wherein anti-development pressures and amenity preservation hold sway;
- the contested countryside, where there are often marked conflicts between old and new groups in the population;
- the paternalistic countryside, where private landowning interests dominate; and
- the clientelist countryside, where ‘agriculture and its associated institutions’ are still dominant.

Although it may be possible to identify regions and sub-regions with one of these characteristics, in practice there is likely to be great difficulty in using this classification as more than a conceptual device. Indeed, in a Scottish context, it might be considered that the classification fails to represent the rather different land use and ownership structures that prevail in northern Britain. Nonetheless, the generally contested nature of development and the tensions associated with a movement from a predominantly productivist to a more consumption oriented use of rural land are evident throughout the UK.

Table 1. Industrial Structure of Scotland 1989. (Source : Scottish Office 1992).

Sector	Rural Scotland		Scotland
	Number	%	%
Primary	31 057	6.4	4.4
Manufacturing	89 547	18.4	20.4
Construction	33 498	6.9	6.8
Services	332 721	68.3	68.4
TOTAL	486 823	100.0	100.0

2.2 Employment

Scotland, like most advanced western developed economies, has experienced a marked diminution of primary sector employment over the last 50 years. From a mid-19th century peak, land-based employment has contracted to about one tenth of its highest level. Over the same period there has been a dramatic growth in service-related employment. In the last 30 years there has also been a marked increase in the importance of manufacturing employment in rural areas.

Employment change is the outcome of a complex set of forces, some economic and some policy-driven. Particularly in rural areas, where the economies have been distorted by policy interventions over a long period of time, it is difficult to disentangle the various contributory causes of employment change. That economic and other non-intervention-related forces are at work is evidenced in big differences between labour markets over sometimes relatively modest distances, even where policy instruments are uniform. Some Scottish regional economies have been affected significantly by the oil exploitation in the North Sea. However, the extent of manufacturing employment growth in the Highlands and Islands is at least in part attributable to a long period of government intervention which has encouraged at various times both large-scale exogenous manufacturing enterprise and small-scale endogenous enterprise into the region. The industrial structure of rural Scotland for 1989 is summarised in Table 1.

The employment evidence clearly indicates that only a small proportion of the Scottish rural workforce is employed in the primary sector. In the primary sector, agriculture (including horticulture) accounted for 3.5% of all rural employment and forestry a mere 0.6% in 1989. By 1991, the respective figures were 3.2% and 0.4% (Scottish Office 1996) and a 40% decrease in primary sector employment over the decade 1981-1991 is indicated. The residue of primary sector employment is made up of fishing, energy and extraction of oil and gas. Some regions, for example parts of the Borders, Orkney and South West Scotland, are relatively dependent on the primary sector, with between 10 and 20 % of the workforce dependent on land-based industry. However, the inconsequentiality of forestry in Scotland is reflected in the fact that it is not even mentioned as an industry in the recent Scottish Office discussion paper 'Towards a Development Strategy for Rural Scotland' (Scottish Office 1997).

Although data relating to employment levels by economic sector can be notoriously misleading (because of the principal problem arises in the inclusion or exclusion of self-employed individuals who are not indicated in the Employment Records Returns), there is little doubt that employment in the primary sector of the economy has declined dramatically over the last 50 years in the UK. This is a situation that has long been identified in developed western economies and is evident throughout Europe. The primary sector employment in rural Scotland fell by a massive 36% over the period 1981 to 1989. Currently the primary sector in Scotland accounts for less than 3% of the total workforce. Further declines in the level of employment are anticipated and recent commentators (Scottish Office 1996) have noted how there is a growing similarity between the employment structure of urban and rural districts.

There has been a marked reduction in forest-related employment in the last 30 years in the UK. Matthews et al. (1972) report levels of employment of about one man per 60 ha. for 'planting, tending and harvesting trees'. In 1998 the Forest Industry Handbook (FICB 1998) reported figures of about 210 ha per person for a similar range of tasks to those used in Matthews et al's estimates, based on total employment in forestry divided by the total hectareage of trees. Slee et al. (1996) estimated direct employment at between 2 and 2.5 FTEs in two Scottish Forest Enterprise forests, based on data derived from Forest District Managers, indicating a figure 400-500 ha per person.

There has been a long-running debate on the relative merits of forestry and agriculture in creating rural jobs. Forestry was generally thought to be better than agriculture in terms of employment creation per unit area on the poorest quality land, but on better quality hill and upland farms (essentially on enclosed farmland), the employment per unit area in agriculture normally exceeded that in forestry (Price and Johnson 1996).

In terms of trends in forest-related employment, it appears likely that the decline in employment per unit area in forestry has been more rapid than that in agriculture. Price and Johnson (1996) cite evidence for one area of North Wales, which shows a fourfold decline in forest employment per unit area compared to a halving of agricultural employment between 1951 and 1971. Subsequent technological change is likely to have increased the difference still more. The shift from motor-manual felling to machine harvesting has dramatically reduced the employment in forestry at the end of the rotation and the planting of trees remains as the last frontier to be attacked by labour-reducing mechanisation.

It is difficult to disaggregate the land-based component of conventionally presented aggregate employment data and determine which manufacturing employment is dependent on the land-based industries. However, claims from primary industry pressure groups about the dominance of primary sector and its related upstream and downstream activity (the farm and forest supply chains) are likely to be exaggerations, although in some relatively small areas it is not improbable that in excess of 25% of all employment is directly associated with the land-based sector. In rural Scotland, about 9% of manufacturing industry is involved in food and forest product processing, although the extent to which this is reliant on locally available primary products is uncertain.

2.3 Income

Average incomes in many extensive areas of rural Scotland tend to be below those of Scotland as a whole. Further, over the 1980s, rural incomes declined relative to the national situation, reflecting a worsening of the average situation (Scottish Office 1996). However, in some areas, high levels of commuting reduce the impact of rural income decline. However, it is important to realise that there are very substantial variations within different sub-regions of rural Scotland.

2.4 General issues relating to the rural economy

Many commentators have been critical of the small contribution of the primary sector to overall economic well-being in rural areas, particularly in relation to the proportion of public support it attracts. Such commentators have often argued for a more broadly based system of industry support.

There is a significant paradox about rural employment change at an aggregate level. In general, rural employment has expanded and diversified, but in many areas rural wage levels remain below the national average and in many regions this differential appears to be increasing rather than declining.

In spite of frequent public presentation of aggregate data on the Scottish rural economy, the relative importance of sub-sectors of each of the main sectors and the nature of their inter-industry linkages are still not well understood. In the rural sector, there are major difficulties in identifying with precision the extent to which there are linkages between what might be termed the 'motors' of the rural economy (for example agriculture, forestry, fishing, sporting use, tourism) and the suppliers and buyers with whom these industries interact. There is also a tendency for one-off studies of particular sectors, using particular methodologies, to be used for promotional purposes by industry stakeholders. Good comparative data of the economic linkages of different sectors at a regional level is not available.

A principal challenge facing economic analysts of the rural (or indeed any) sector of the economy is to consider first the competitiveness of different component parts of the economy and second, if the sector is weakly competitive, what, if any, actions and interventions can alleviate the weakness. A major second challenge is to understand the linkages between different parts of the economy, in particular to identify with an acceptable degree of precision whether the huge services sector is dependent on other industries or represents an alternative motor of post-productivist employment in the form of recreation and tourism.

In the northern and north western regions of Scotland there is evidence that forestry is not economically competitive (Macmillan 1993). Further, there is little or no evidence that the linkages associated with forestry as a land use are significantly better than any other rural economic activity. Consequently, it is difficult to make an economic case for further afforestation in many northern and western parts of Scotland, and major questions arise as to appropriate strategies to pursue at a time of felling.

3. PROBLEM BOUNDARIES

3.1 The rural-urban boundary

The distinction between urban and rural areas, self-evident in the past on the basis of sociological criteria (*Gemeinschaft: Gesellschaft*) and in terms of their economies has become blurred and indistinct. The boundary between primary-based rural and secondary- or tertiary-based urban domains is breaking down fast.

Nowhere is the greying of the boundary between primary and service functions of the rural economy more evident than in the primary sector, where post-productivist rationales are increasingly used to justify public policy support. Alongside the new types of support for amenity goods, there has been an upsurge of interest by environmental NGOs in land purchase.

The emerging conservation sector probably employs more people per unit area than conventional land-using activities would on the same area of land, in spite of frequent claims that conservation use sterilises land and curtails economic activity. A recent study (Independent Northern Consultants 1995) suggested that approximately 1.3% of all jobs in the Highlands and Islands were attributable to the environmental sector and that this had grown by about 100% over the last decade. A study of one predominantly forested nature reserve, Abernethy Forest (Rayment 1996), suggests that ‘directly and indirectly Abernethy reserve supports 35 full-time equivalent jobs in the economy of Badenoch and Strathspey’.

3.2 The boundary between primary sector and other types of economic activity

Both forest and farm sectors in the UK have been confronted by new ‘post-productivist’ demands for environmental services. Many of these new demands are associated with recreation and amenity, which have many (quasi-) public good characteristics. This makes their provision by the market problematic. In addition to these amenity-related demands, new issues about sustainability have become important influences on policy formation. In both the farm and forest sectors the last decade has been a period of considerable reorientation of policy to meet these new demands.

The public good role of primary land-using activities is likely to be highly important in areas where tourism has emerged as an important employer. However, much of the forest that has been created in the last 80 years is likely to have modest public good values in comparison to semi-natural native woodland. The argument that forestry and farming sustain these environmental public goods can only be upheld if it can be shown that an absence of these activities would be detrimental to the tourist activity that takes place in rural Scotland. Some of the recent changes to forest policy, in particular the introduction of community woodland grants and higher levels of grants for broadleaves and native woodlands can be seen as a response to these public good arguments, as can the introduction of locational supplements. However, there remains remarkably little information on the locational specificity of benefits, although Willis and Benson (1989) have argued that the amenity public goods associated with forestry are likely to be small in most remote rural areas.

The development of forestry in Britain in the 20th century owes its existence and predominant form to the demand for a strategic forest reserve that was premised on the demand for pit-props to sustain the industrial economy of the UK in a 'war of attrition'. Although this role was recognised as irrelevant by the early 1950s as a result of the development of nuclear weaponry, the shape and structure of UK forestry owes much to the forestry traditions established in the period between 1920 and 1950. However, forestry in the UK has never been exclusively driven by a single objective. In the 1930s rural employment issues were a significant concern during a period of high unemployment and economic recession and, even at the time when timber production was a principal aim, the Forestry Commission created and managed forest parks.

There has been a transformation of the primary purpose of UK forestry from strategic reserve from 1920 to the 1950s to timber production up to about 1985 to multi-purpose forestry in the last decade. This has been reflected in significant changes in the nature of recent forestry practice, but given the long cycles associated with timber production, it is unsurprising that so much of the forest estate reflects past rather than present objectives. However, in spite of changes in relation to new planting, most replanting still follows the old industrial forestry model and there is an emerging schizophrenia between the modest changes in replanted production forests and the massive changes in new afforestation practice.

3.3 The boundary between financial and economic analysis

The gulf between economic analysis and financial analysis is considerable, especially where private sector individuals are making investment decisions in a sector characterised by multiple external effects. Investors' sole interests are usually a return on investment. The economist, on the other hand, is often concerned with the real resource costs of the activity and with estimating accurately the external effects and the other causes of market failure with a view to trying to identify actions which might steer the economy in the direction of greater efficiency.

This divergence of modes of analysis was particularly evident in the controversy surrounding the Caithness 'Flowlands' in the 1980s, when forestry investment companies, exploiting a legal tax avoidance loophole, afforested a substantial area of environmentally sensitive wet moorland. It is almost inconceivable that in economic terms such an investment could be justified, yet, until the closure of the tax loophole in the 1988 budget, it remained a perfectly rational financial investment decision for forestry investment companies (Tompkins 1989).

As the non-market elements of forestry have become more important, so it is to be expected that the boundary area between financial and economic analyses will become more controversial.

3.4 The boundary between forest policy and other policies

Forest policy in the UK is framed by legislation, which gives substantial powers of implementation to the Forestry Commission. The principal forestry act is the Forestry Act, 1967, which consolidates forest legislation from 1919 to 1963. This act defined the powers of the Forestry Commission and its commissioners and specified statutory consultation procedures. Most of the recent changes in forest policy have not resulted from acts but from amendments to grant aid implemented by the Forestry Commission or from environmental policy changes outside forestry legislation. Two principal types of forest policy change have resulted. First, grant aid for amenity-related forestry has been much enhanced at a time when grants for conventional production forestry have stood still or declined. Second, there is much more evidence of locational specificity to the grant system. Particular types of forestry are thus targeted at particular regions. In the wider arena of policy change, there have been significant changes in environmental policy.

In addition to these changes, many guidelines and codes of practice have been introduced which give prominence to environmental factors such as wildlife, water quality, archaeology and landscape.

Forestry has always been modestly regulated by local government through their ability to comment on applications for grant aid and, more recently in Scotland, through the production of Indicative Forestry Strategies. In addition, under EU legislation, major environment-affecting afforestation proposals are subjected to environmental assessment.

Subsequent to the Rio Earth Summit, and the agreement of the Helsinki Guidelines the UK has moved towards the production of a Forest Standard (The Forestry Authority 1998) which provides the context for sustainable forest practice in the UK. This standard accommodates the pre-existing regulatory instruments.

3.5 Boundaries between production and multi-purpose forestry

The achievement of effective multi-purpose forestry is constrained by market failure, by an inability of key decision makers to put an accurate price on positive and negative externalities, by residual productivist attitudes of key institutions which continue to assert a need to produce (often low grade) timber and pulp, by a predominantly passive rural population disengaged from issues of forest management and to an extent by the nature of Scottish land ownership and the specificities of Scottish land law.

The existence of market failure means that in the absence of the effective and accurate measurement of the externalities and the design of appropriate remedial policies, it is simply not possible to determine land use optima from an economic perspective. However, there has been a tendency recently to ignore the measurement of externalities in any formal way and to accept negotiated solutions derived from mediated stakeholder interactions. Indeed, it is probable that in many situations where public funding has been sought for new private afforestation, the resolution of appropriate types of forestry has been determined by guesswork rather than by formal analysis. Hence it might be argued that it is more relevant to explore the political

economy of forestry than to dwell on (fruitless searches for) conventional neo-classical estimations land use optima.

The Forestry Commission's attitudes were shaped in the shadow of war and the prevailing model of forestry for fifty or more years has been based on the single-minded production of trees for timber or pulp. Many contemporary critics would argue that this cadre of production foresters (both public and private sector) failed for too long to pick up the signals that both representatives of environmental groups and the public at large were not entirely content with the productivist model.

There is a marked contrast in Scotland between the passivity of many rural communities with regard to the forest sector and the existence of pockets of resistance of a number of communities which have responded vigorously to changes in their local forestry sector. The case of Laggan in Highland Region is the most widely publicised example of a community that was prepared to challenge the conventional wisdom on the way in which forests should be owned and managed. At the same time as the future of Laggan's forests were being debated heatedly, a new pressure group, Reforesting Scotland, with a complex reformist agenda covering environment, sustainable development and land reform, was becoming increasingly active.

Finally, it is important to consider the scope for effective multiple use in the context of the idiosyncratic patterns of land ownership in Scotland. Nowhere else in Europe is such a large proportion of the land in so few hands. Nowhere else in Europe is the extent of land management for hunting, shooting and fishing quite so pervasive. For a country characterised by predominantly extensive land use, there are few European examples (with the exception of Ireland) where there is a parallel history of deforestation. The dominance of large-scale land ownership associated with game management (particularly red deer) and the desire of estate owners to maintain or increase deer numbers has slowed down and restricted reforestation. Further, farm-forestry has, until very recently, been almost non-existent as a result of Scottish land law which gives tenant farmers no ownership of woodland products on their land. However perverse it may appear to advocates of land reform, it might be argued that private amenity-driven land ownership may be yield land use outcomes closer to effective multi-purpose forestry than does industrial plantation forestry.

3.6 Boundaries between stakeholders

As forest policy has moved from being highly focused on a specific objective to recognising the legitimacy of multi-purpose forestry, so it becomes essential to identify the legitimate stakeholders in determining forest policy and practice. It is necessary to pose the question: who has a right to influence forestry?

Landowners often feel highly proprietorial about their holdings, yet recent legislative proposals on land reform in Scotland have indicated that communities should be able to influence land use decisions. Given the calls for greater democratisation of land use (Scottish Office 1998), what are the implications of this on forestry decision making? Further, who are legitimate stakeholders and what are the limits of their rights to steer forest policy or practice? Finally, who comprises a community of interest for a particular area? Are outside pressure groups concerned about non-use values in a particular area legitimate stakeholders or are communities of interest geographically bounded?

3.7 Boundaries between regions and agencies

It is immediately evident when forest policy is under scrutiny that the spatial framework of analysis is highly variable. For example, in the case of the Cairngorms Forest and Woodland Framework, there is the boundary of the proposed national park (itself negotiable), the boundaries of the four or five local authorities, the boundaries of the four regional forest offices, the boundaries of three Scottish Natural Heritage regional offices, and the boundaries of the three enterprise companies. This creates enormous difficulties when there are so many different institutional stakeholders.

If regional strategies are to be determined, it is necessary to ascertain the appropriate spatial scale for analysis. This should depend, *inter alia*, on the nature of the forest economy and the nature of administrative and decision-making structures. The above example illustrates the extent of the problem.

Forest-related income and employment can be considered in terms of both their volume and their location. Distant urban-based processing may constitute an important part of the wood supply chain, but do little to add value to the timber in the area of production. There is likely to be competition between a range of depressed and disadvantaged areas that benefit from selective industrial assistance in the forest processing industry. Policy makers may thus be interested in both the total volume of forest-related wealth created and where these benefits arise. The trade-offs between volume and location are likely to be more important when there are substantial regional disparities in economic well-being.

A range of institutions has the potential to support local income and employment generation from forest-related activity. These include the Forestry Commission, national and regional enterprise agencies. More recently, the European Union (EU) has had substantial influence on rural development policies through the spending under the Structural Funds programmes and a range of Community Initiatives.

In the past, rural development has been promoted actively by the Forestry Commission as a minor, but nonetheless important objective. However, a number of factors have led to a dilution of the rural development function of forestry. First, and most importantly, the Forestry Commission was threatened with privatisation during recent Conservative administrations of the 1980s and early 1990s and a significant disposal programme was implemented. Second, the Forest Enterprise component of the Forestry Commission is now expected to meet certain Treasury-prescribed targets for revenue generation. This has led to increasing amounts of work being contracted out in a cost-reducing effort, often to itinerant workers. This leads to a rapid leakage of benefits out of a region.

There was a major transformation of the structure of enterprise support in the early 1990s in Scotland. Prior to this time, the responsibilities for encouraging forest processing rested primarily with the Scottish Development Agency which focused on lowland Scotland and predominantly the central industrial belt, and the Highlands and Islands Development Board which focussed on the disadvantaged regions of the north of Scotland. After 1991, the national level responsibilities were carried by two organisations: Scottish Enterprise (SE) and Highlands and Islands Enterprise (HIE). These new bodies carried out both industrial support and training functions. Below these national-level bodies, Local Enterprise Companies (LECs) were formed to implement

SE and HIE policy through delegated powers. LECs are private companies funded with public money, which work to a business plan to achieve their development aims. Below the level of LECs, there is a further tier of enterprise support through the work of the Local Enterprise Trusts, which act as a conduit for LEC money and often carry administrative responsibility for certain types of EU funding.

EU funding has become increasingly important in rural economic development. Under the first round of Structural Fund spending to 1993, the Highlands and Islands benefited from Objective 5b status. For the second round, the HIE area was given Objective 1 status and large areas of rural Scotland outwith the Highlands and Islands were given Objective 5b status. In addition there have been a number of LEADER local action groups operating under the LEADER CI and various other initiatives such as LIFE have supported forest-related activity. More recently, Article 10 funding, available only to countries with highly dispersed populations in northern Europe, has been given to a number of projects, some of which are forestry related.

In addition to the overtly economic development agencies, there are a number of other agencies with the capacity to influence forest-related developments. A number of forestry-specific partnerships have been developed, such as Highland Birchwoods, which combines conservation and economic development objectives and the Central Scotland Countryside Trust, which has promoted forestry as a form of land regeneration.

The institutional map of the Scottish forestry scene would be incomplete without a consideration of NGOs. These NGOs may work independently, but are often supported directly or indirectly by public money. In Scotland, Reforesting Scotland acts as a campaigning organisation seeking to promote reforestation and has placed a strong emphasis on community participation. Other NGOs include the Millennium Forest for Scotland and the Woodland Trust. These NGOs vary in their aims. Some are radical campaigning groups while others are simply promoting native woodland for conservation purposes.

3.8 The boundary between research and practice

In order to design more appropriate styles of forestry to meet contemporary and future needs there are a number of requirements. First, it is important to better understand the demands and aspirations of the public. Second there is a need to be better able to value the complex and multiple outputs from forests. It is not only the external effects of forestry that need to be better understood, but also the extent and importance of inter-industry linkages between forestry and the rest of the economy. Third, it is necessary to design policy mechanisms that steer forestry practice in an appropriate direction and to evaluate these policy mechanisms in terms of the widely accepted aims of multi-purpose sustainable forestry. Finally, it is necessary to engender more participatory and flexible forms of forestry, and to accept a greater degree of public involvement and a greater degree of heterogeneity in the resultant styles of forestry. Given that at present we know all too little about the economic and social values associated with different styles of forestry, it is incumbent on policy makers to create the seed-bed on which alternative models can develop and on researchers to design better methods to estimate the multiple benefits and values associated with forests.

4. CONCLUSIONS

The context for forest-related policy making has become much more complex in recent decades. Not only has the traditional policy failed to deliver significant economic development gains, but it has also been associated with habitat destruction and environmental damage. The need for joined-up rural policy making has never been greater and regional and national strategies both have potential roles to play in this process. However, the production of strategies depends crucially on the power of the different stakeholders, who include the key agencies, the landowners and rural communities in all their diversity. The social changes that have taken place in rural Britain in the post war period make the reconciliation of different interests in different places inherently more problematic in all spheres of policy making. Forest policy making is no exception.

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FOREST CULTURE AND FOREST POLICY IN AUSTRIA: POLICY MAKING BY THE SECTOR FOR THE SECTOR

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ABSTRACT

Forests, covering about 47% of Austria's territory, are an important element of the country's landscape and culture. At the same time, the forestry sector plays only a minor role within the national economy and within the Austrian political system. This entailed that, so far, forest policy has been made *by* the forestry sector *for* the forestry sector. With a high share of forests in private ownership, forest policy is determined by the goals and interests of private forest owners.

Similar to Austria's political culture in general, also forest-related policy making is characterised by the institutionalisation of consensus and co-operation. Through the corporatist structure of the Austrian 'social partnership' forest interest groups are granted institutionalised influence on policy formulation and implementation.

At present, Austrian forest policy is far from pursuing a broad inter-sectoral and holistic approach in order to achieve the target of sustainable forest management. With changes in the political framework, such as pressure from outside or new financial incentives, the chances for implementing a comprehensive forest policy programme could increase.

Keywords: Austria, forest policy, policy instruments, political culture, forest land-use planning, mountain forest policy

1. INTRODUCTION

This paper is intended to give a general overview of forest-related policy making in Austria.¹ On the one hand, it focuses on the legal and policy framework for forest and forest-related activities in Austria, on the other hand, it deals with Austria's forest culture looking at forests as part of nature, as a part of the economy and as part of society in general.

In the first part of the paper, a short overview on forests and forestry in Austria (Chapter 2) is given. The paper continues by portraying the Austrian political system in general and the forest policy system in particular putting a special emphasis on Austria's forest policy culture (Chapter 3). Next the 'outcome' – in the sense of long-term goals and strategies – of the political setting described before (Chapter 4) is discussed. Finally, the question: what are the chances for implementing a comprehensive forest policy programme in Austria is raised (Chapter 5).

2. FORESTS AND FORESTRY IN AUSTRIA²

2.1 Forests: Part of nature

Ecological basis and genesis of forests

Austria is situated in the temperate climatic zone and a great share of its land consists of *mountains*. Austrian landscapes range from plains at approximately 100 metres above the sea-level to the Alps with peaks at almost 4000 metres.

During the glacial period (Ice Age) with its last peak about 18 000 years ago, the Alpine region was completely covered with glaciers of up to 1700 metres strength. Forests started to grow again about 13 000 years ago from retreat areas in south-east Europe. In the stone-age the area was almost completely covered with forests. Only the high peaks of the Alps and bogs were spared. From the stone-age on (Neolithic: 4000 years B.C.) settlers started to clear woodlands for agricultural use. Arable land was cleared while the forest remained untouched on steep and stony sites. In the Middle-Ages, settlement started gradually in alpine areas as well. The growing population cleared forests for farming and for pastures. The natural tree-line in the Alps was lowered due to clearing forests for summer pastures. Nowadays, the tree-line is often at 1600 metres, whereas it could potentially reach 1800 or 2000 metres.

At present, about 47% of Austria's territory is covered with forests. Most of the forests are located in the mountainous regions. In the plains, forests often cover less than 20% of the land.

¹ In a European context the question arises to what extent the Austrian situation is comparable to other European, especially Central European, countries. Here no unequivocal answer can be given: In some respects Austria is a typical example for other Central European countries, especially Switzerland and Germany; in other respects Austrian forest policy making is rather peculiar and cannot be compared to other neighbouring countries.

² Following Pregernig/Weiss (1998)

Dominant types of forests

Austrian forests are dominated by coniferous tree species (accounting for 69.2% of the forests). Higher percentages of deciduous trees (in total 22.3%) are found only in lower regions. The most important tree species in terms of both surface and economic importance is spruce (*Picea abies*). It grows on 55.7% of wooded land. Other major tree species are: beech (*Fagus silvatica* – 9.2%), white pine (*Pinus silvestris* – 5.4%), larch (*Larix decidua* – 4.4%), fir (*Abies alba* – 2.3%) and oak (*Quercus sp.* – 2.0%). (BMLF 1998)

Whereas in alpine forests coniferous tree species dominate naturally, the original share of broad-leaved trees was much higher in lower regions. For commercial reasons, forestry has led to alterations in the composition of tree species, which has shifted to more coniferous trees. Today, the share of broad-leaved and mixed stands is 35% whereas its natural proportion would be approximately 71%. Since the 1970s, however, the share of broad-leaved and mixed stands has been increasing again (BMLF 1996; Katzmann et al. 1990).

Nature protection values

Most of Austrian forests are managed for timber production. According to a recent survey on the degree of modification of Austrian forests by human intervention (Grabherr et al. 1998), the majority of the forests can be regarded as “moderately altered” (app. 40%). 27% are “altered”, 7% are artificial forests. Plantations for short-rotation production play only a minor role. 22% of Austrian forests are “semi-natural”, and 3% are without impact. A good part of the forests still close to nature are protective forests with hardly any economic value, which are located near the alpine tree-line.

In order to comply with both the Helsinki Resolution H2 on the conservation of biodiversity of European forests and the Alpine Convention, the Austrian Ministry of Agriculture and Forestry has launched a programme aiming at the development of a network of *natural forest reserves*. The objective is to cover all potential natural forest communities in Austria. 159 natural forest reserves exist to date, comprising a forest area of about 6000 ha. According to the nature protection laws of the provinces other protected areas are *nature reserves* (most reserves are wet or dry biotopes only partly containing forest stands) and *national parks* (today there are 5 national parks, partly in alpine areas, partly in lower wetlands). These areas comprise estimated 45 000 ha of forests, however, all interventions are strictly prohibited only in smaller proportions of them (Frank and Koch 1998).

2.2 Forests: Part of the economy

Use of Austrian forests

Forests, covering about 47% of Austria’s territory, are an important element of the country’s landscape, economy and culture. Over the past years the areas covered by forests have *increased* by approximately 7700 ha per year on an average. A total of 972 mill. m³ of wood are found in the Austrian forests, the annual increment amounts to 31.4 mill. m³. Only 19.8 mill. m³ are felled each year.

86% of Austria's forests can be classified as commercial forests (with 76% high forest, 2.5% coppice forest, and 7.5% protective forest with yield), 14% are forests without yield (BMLF 1995 and 1997).

Forests are not only used for timber production, but also for hunting. Some areas, especially in connection with alpine pastures, are still used for grazing. Another mainly non-commercial use of forests is recreation and picking fruits, berries and mushrooms, which is allowed for everybody in all forests according to the forest law.

Structure of ownership and management goals

The Austrian forestry sector is characterised by a very *high fragmentation* of forest property: 3.88 million ha of forest land are managed by about 214 000 forest owners. 99% of the silviculturists manage enterprises of less than 200 ha, 65% of the forest enterprises have a size of less than 5 ha. About one third of the entire forest area is looked after by major forest enterprises.

Approximately 80% of Austria's forests are privately owned (with 10% in the hands of local forest co-operatives). One fifth of the forests are owned by public authorities: 16% are national forests in the hands of the Federal Austrian Forests (*Österreichische Bundesforste AG*), 4% are other national, provincial or municipal forests. In comparison with other countries, Austria has an exceptionally high share of forests in private hands; within the ECE region only Norway and Portugal have a higher portion of private forests.

It goes without saying that the level of private forest land ownership shows repercussions in the national forest policy and politics. Timber production plays a predominant role in the value system of forest owners and foresters (Glück 1995). Professional thinking is dominated by a market-oriented model which implies harsh criticism of any restrictions to the forest land owner's freedom of choice. At the same time, this concept of liberalism does not prevent foresters and forest land owners from emphatically demanding public support in form of tax relieves and subsidies. So liberalism in forestry is a kind of *pseudo-liberalism* (Pleschberger 1989).

Management goals vary in different categories of ownership. *Larger forest properties* are managed primarily for timber production. They have well-trained personnel, detailed management plans and special harvesting equipment. It is important to notice that the forest owners' goals vary extensively and cannot primarily be found in management goals of conventional enterprises like "cash-flow", "return-on-investment", etc. Returns in forestry are very small (usually 1 to 3%). Forest owners' goals are rather found in long-term, low-risk investment, as well as in hobby and status aspects (property, hunting, etc.). For *farmers*, market-related considerations in forest management are of minor importance. The market value of their forest has to be seen in connection with the farm and in a subsistence economy. They use wood for fuel and timber for construction, and grazing is still potentially important in certain regions. It is typical for farmers to regard the forest as a reserve for unexpected or extraordinary expenses. *Public ownership* in Austria is also characterised by a variety of objectives. The Federal Austrian Forests, since its transformation into a public limited company (with the state still holding 100% of the shares), are mainly oriented towards the market-oriented goal of wood production. In contrast, in municipal forests greater importance is attached to infrastructural goals, especially recreational values and protection against natural hazards.

Relative strength of the forestry sector within the Austrian economy

Although Austria is rather rich in forests, the forestry sector plays only a minor role within the economy of the country. In 1996, the share of the forest industry sector amounted to 3.8% of Austria's gross domestic product (GDP) with only 0.2% attributable to forestry and 3.6% to the processing of timber.

The picture changes a bit when you look at the forest industry sector from a macro-level perspective. The *forest and forest industry cluster* (e.g. sawnwood, paper and paper processing, particle board, furniture manufacture, pulp and paper machinery) is one of the most important clusters of the Austrian national economy. In *foreign trade* as well, the forest industry sector is of considerable importance. It is the second most important positive contributor to the Austrian balance of trade, following tourism (accounting for 5% of total imports and 10% of total exports) (Schwarzbauer 1994).

2.3 Forests: Part of society

Cultural aspects of forests in Austria

Forests play a prominent role in the culture of Central European countries. Trees and forests are found in myths and fairy-tales, in poems and paintings (Ringel 1987). In ancient times, however, when settlers put hard work into clearing arable land, the forest was seen as an evil to people and civilisation. Modern society has a rather romantic view of the forest. The forest is the place where unspoilt nature can be found even in a highly organised and technicised world. Forests are often used as metaphors for the destiny of humankind. People in Austria as well as in Germany are said to have a very strong relation to the forest. This can help to explain the steady concern about the health of the forest. Forest decline by air-pollution is seen as a first sign for the self-destruction of modern society which exploits natural resources and pollutes the environment. "Save the forest" is an important motive for people to take action in environmental protection (Sieferle 1997).

Role of forests for the community and for land owners

Besides their economic value, forests provide other services and functions for the community. Forests protect the soil against erosion, regulate the climate and the water household, and in alpine regions, which are of particular importance in Austria, they protect against natural hazards like torrents, landslides, mudflows, rock-fall and avalanches. Forest management is a rather extensive form of land use for the major part, which means that forest areas are very close to nature. Forests comprise ecologically unspoilt areas – this fact makes them important for nature protection goals. Forests provide landscape amenities and space where people can experience nature or can seek refuge. They are highly appreciated as recreation areas (Koch and Rasmussen 1998).

Opinion polls have shown that among the different interests of society concerning forests or their management, the *protective aspects*, i.e. the protection of the population from negative natural effects like erosion, floods or landslides and the preservation of the diversity of animal and plant species, are clearly favoured over the utilisation as a resource (Rametsteiner 1999). Subsequently, social demands on forests and forestry are steadily increasing.

Forest owners gain income from managing forests for wood production and hunting. Forest management provides employment opportunities and income in rural areas. For land owners, the property has moreover identity and image values. Farm forests have many functions for the farmers: job, income, property value, capital reserve, fuel and timber, grazing, hunting, etc. (Terrasson 1998).

Relative strength of the forestry sector within the Austrian political system

Parallel to its peripheral role within the Austrian economy, the forestry sector takes up a rather negligible position within the Austrian political system as well. Its ability to capture *resources* and its capacity to draw the *attention of politicians and decision-makers* are rather modest. Forestry receives about 260 million ATS of federal subsidies; this corresponds to 2.3% of federal subsidies transferred to the whole agrarian sector. Within the responsible Federal Ministry, forestry plays a minor role. As to its professional priorities, the Ministry of Agriculture and Forestry especially emphasises agricultural questions whereas forestry is seen as relatively less important. As can be expected under these circumstances, forest-related interests have poor chances of standing up against lobbies backed up by powerful economic interest groups.

3. LEGAL AND POLICY FRAMEWORK FOR FOREST AND FOREST-RELATED ACTIVITIES

3.1 Legal framework: Constitutional and administrative setting

Austria is a federal state which consists of nine provinces (*Länder*). Legislative powers are divided between the federal state and the provinces, with the distribution of power heavily tilted towards the federal parliament. According to the Austrian constitution (Article 10), forestry is a matter of federal legislation and administration.³ The federal government is also in charge of emission protection, air quality (except for emissions from heating systems), permissions for industrial installations, steam boilers and engines, and traffic.

At the same time, a number of areas directly or indirectly relating to forests or forestry are under the responsibility of the *Länder*. The most important issues are regional planning, airborne emissions from heating systems, agriculture, nature conservation, and hunting. The coexistence of the national law and provincial law and particularly their application to the same object – in this case the same piece of forest land – inevitably leads to problems of co-ordination and conflict.

³ 'Forestry' (*Forstwesen*) in this context is meant to comprise all activities in connection with the tending, maintenance and protection of forest stands including the importing and exporting of roundwood, forestry education as well as torrent and avalanche control.

3.2 Policy network: Main interest groups

Austrian forest and environmental policies are influenced by a great number of different social actors. The 'core' network of Austrian forest and environmental politics is depicted in Figure 1, with the columns indicating three distinguishable (but sometimes also overlapping) 'discourse-coalitions', i.e. groups of actors sharing values and attitudes and pursuing common goals. The following discussion will focus on the social relevance of the major actors in the forest and environmental policy arena. It will examine the formal role which the constitution and ordinary laws provide for them, as well as their actual role in the political process. In this context, only the most important social actors can be considered.

Forest authority

There are three levels of forest administration in Austria. At *state* level the Ministry of Agriculture and Forestry has jurisdiction over forest-related matters. In the *provinces*, the governor (*Landeshauptmann*) is the competent forest authority. The governor acts as general authority deciding not only on forest matters but also on other subjects like hunting, nature protection or trade and industry. A separate forestry department (*Landesforstdirektion*) assists the provincial governor in forest-professional questions. Formally this department has only consulting functions. The same applies at local level: the official in charge is the district commissioner (*Bezirkshauptmann*) who is assisted by a forestry department (*Bezirksforstinspektion*). The official formally in charge, the governor or the district commissioner, follows a concept of 'political rationality' which means that he or she has to represent the social interests according to their political weight. So this two-tier system, with its separation between the political decision-maker and professional department, often leads to disadvantaged forestry interests that cannot make themselves heard when competing with other, more powerful social actors.

One of the major duties of the forest authority is the *implementation of the Forest Act*. By performing its statutory tasks, the forest authority gets in touch with its clientele, namely foresters and forest land owners. Due to this tight connection, the self-image of the civil servants changes from objective supervisor of forest management to intercessor and advocate of their clientele. Instead of trying to secure legal compliance on the part of the forest enterprises by exerting pressure on them, the forest authority tries to motivate the target group to act voluntarily in a lawful manner. Civil servants are on common ground with foresters and forest owners with a system of shared values and attitudes serving to harmonise conflicting interests.

In addition to the implementation of the Forest Act, the forest authority, mainly the Federal Ministry, exerts a strong influence on the *making* of forest-related laws as well.

Environmental authority and Ministry of Economic Affairs

The environment was granted its own administration and jurisdiction rather late. When the Federal Ministry of Public Health and Environmental Protection was established in 1972, almost all areas of responsibility had already been divided up between other more powerful ministries. So the establishment of this ministry was mostly an act of symbolic politics: for almost 15 years, with a small staff of a dozen people involved in environmental affairs, the ministry remained virtually without powers and was rebuffed

	Environmental protection	Forestry	Trade and industry
authority	Ministry of Environment, Youth and Family Affairs	Ministry of Agriculture and Forestry	Ministry of Economic Affairs
statutory interest groups		Chambers of Agriculture	Chambers of Commerce
voluntary interest groups	environmental groups	forest Owners' associations	Association of Austrian Industrialists etc.
"grassroots"	general public	forest land owners	business enterprises

Figure 1. Austrian forest and environmental policy network. Source: Pregernig/Weiss (1998)

when it requested to participate in the preparation of environmentally relevant legislation carried out by other ministries. A comprehensive Environmental Protection Act which had been in preparation by the environment ministry over several years, was never completed (Lauber 1997).

In 1988, the environment ministry managed to get hold of real powers and resources for the first time. With a staff of about 300, the Ministry of Environment, Youth and Family Affairs (hereinafter shortly called 'environment ministry') now works on general environmental policy, air quality, waste, chemicals, the allocation of environmental funds to the provinces and part of environmental inspection. In many cases the environment ministry has to share its power with other federal agencies, usually the *Ministry of Economic Affairs*, which are stronger in most cases because of their political role. However, the position of the environment ministry has been strengthened thanks to EU membership, because it now co-ordinates more policy areas at the European level than at home (Lauber 1997).

Forestry interest groups

Austria – a 'Kammerstaat'? In Austria, the representation of group interests is transferred from the state to self-governing bodies called 'chambers' (*Kammern*). Chambers are statutory interest organisations, established by public law and with obligatory membership. As central pillars of the so-called '*social partnership*' (*Sozialpartnerschaft*), chambers are an omnipresent and powerful political player typical of the Austrian political system.

The Austrian social partnership is mainly rooted in the co-operation of five large economic interest groups, which in general represent all or all relevant individuals in their specific economic sector: the Chambers of Commerce (*Kammer der gewerblichen Wirtschaft*), the Chambers of Labour (*Arbeiterkammer*), the Chambers of Agriculture (*Landwirtschaftskammer*), as well as the Austrian Trade Union Federation (*Österreichischer Gewerkschaftsbund*) and the Association of Austrian Industrialists (*Industriellenvereinigung*).

Statutory interest groups. Agricultural and forestry interests are looked after by the Chambers of Agriculture (*Landwirtschaftskammern*). Statutorily the chambers engage in two different fields:

- a) the representation of group interests, and
- b) the consulting of foresters and forest land owners as well as the appropriation of subsidies.

With that, the character of the chambers is to some extent ambivalent (Gerlich 1992): on the one hand, they act as powerful and effective lobbyists, and on the other hand, they behave as semi-public institutions which carry out state functions.

At the federal level, the Presidents' Conference of Chambers of Agriculture (*Präsidentenkonferenz der Landwirtschaftskammern*) represents agrarian and forestry interests vis-à-vis other social interests within the social partnership. In Austria's forest politics, the Presidents' Conference is a rather influential institution: As constituent part of the social partnership, the Chambers of Agriculture or rather the Presidents' Conference are granted institutionalised influence on policy formulation. Already in the preparatory stage, they get informed on draft legislation and are allowed to comment on it. This applies to laws as well as ordinances. Usually the comments are incorporated into the final draft before the bill is sent to parliament (Gerlich 1992). In addition, chambers often get the opportunity to send »their« experts into parliamentary subcommittees where draft bills are formulated and finally voted on.

Voluntary interest groups. In addition to statutory interest organisations, there is a network of interest groups based on voluntary membership. The most important voluntary interest groups in the Austrian forestry sector are the Austrian Federation of Forest Owners' Associations (*Hauptverband der Land- und Forstwirtschaftsbetriebe Österreichs*) and the Austrian Forest Association (*Österreichischer Forstverein*).

As a voluntary interest organisation the *Austrian Federation of Forest Owners' Associations* looks after the interests of private farm and forest land owners. Due to a high degree of organisation, approximately 80% of larger estates actually join the association, the Federation is a powerful player in Austrian forest politics (Glück 1976

and 1988). The Federation mainly tries to safeguard the rights of private ownership and to repulse any restrictions on the right of free disposal of private forest property.

The second powerful voluntary interest organisation is the *Austrian Forest Association*. The Association is open to forest land owners as well as forest professionals working in private enterprises, chambers and the bureaucracy. Roughly two thirds of the potential members belong to the Association.⁴ For most forest professionals membership is taken for granted; it results from tradition. Public relations have always been an important task of the Forest Association – inwards, to find the “lowest common denominator” and outwards, to represent the “common position of forestry”. By using the instrument of 'political language' (*Sprachregelung*) the different groups combined in the Association are oriented towards common forest-professional thinking (Glück and Pleschberger 1982).

Environmental interest groups⁵

In Austria, the first organisations oriented at environmental questions were founded in the second half of the nineteenth century. Numerous 'modern' environmental organisations were set up between the late 1970s and the late 1980s.

Whereas the interests of groups relating to production (both trade and labour) are represented by statutory interest groups, the *chambers*, environmental interests are not organised on such a semi-official level and thus do not have access to neo-corporatist bargaining networks. A few years ago, the idea of an 'environmental chamber' was born, to protect environmental interests as well as to liaise between the ministry and environmental organisations, which are usually very critical of the ministry (Krott and Traxler 1993). After a brief discussion, the idea was abandoned. The ruling coalition parties were afraid of the potential power of such an institution; on the other hand, more active environmental organisations expressed doubts about the compromises such a semi-official status might require.

Regardless of the plans for an environmental chamber, contacts between government agencies and environmental organisations seem to have become more relaxed over the last ten years, as these organisations have become stronger and less hostile towards government. The environmental movement has shifted its energy from protesting to formulating plausible alternatives.

Economic interest groups

The major economic interest groups, namely the Chambers of Commerce and the Association of Austrian Industrialists as representatives of business interests, and the Chambers of Labour as well as the Austrian Trade Union Federation as representatives of employees' interests, have had a long reputation of being anti-environmental. The Chamber of Commerce is the social partner with the strongest influence on environmental policy-making. It usually rejects further environmental reforms, which it regards as a threat to Austrian trade and industry. During the last decade, the intransigent attitude of the social partners towards environmental protection has changed and the environmental subdivision of the Chamber of Labour has become a prominent promoter of environmental concerns (Lauber 1997).

⁴ In this calculation, the approximately 210 000 owners of small farm forests are not taken into consideration.

⁵ For further details see Lauber (1997: 93f.).

3.3 Political culture: Styles and patterns of interaction

Since World War II, Austrian politics have been typically characterised as “consociationalist” (Luther and Müller 1992). Austria’s political culture is determined by the institutionalisation of consensus and co-operation. *Corporatism*, in its broadest sense, implies co-operative policy styles in various arenas of the political system. In Austria, consensual politics has been practised both in party politics, especially within the grand coalition government, and in the interaction of interest groups, within the system of ‘*social partnership*’ (Gerlich 1992).

From an organisational point of view, Austrian corporatism is influenced by the principles of monopoly representation, hierarchy, and political linkage.⁶ From a procedural perspective, it is characterised by the principle of *introversion* (Gerlich 1992). The term introversion stands for a situation in which the social partners distract their attention from numerous alternatives and concentrate only on those positions which are mutually acceptable, neglecting other alternatives, which would be unpleasant for one of the partners.

This principle of introversion can be found in the Austrian forestry sector as well. A social phenomenon known as ‘*Green Pillarization*’ (*‘Grüne Versäulung’*) can be interpreted as an archetype version of this ‘old’ co-operative, consensus-oriented policy style. Green pillarization aims at uniting the ‘pillars’ of the forestry sector, that is the forest bureaucracy, private forest owners’ associations, and forestry science, into a single bloc with conflicting interests equalised and with all social actors pursuing a common goal (Pleschberger 1989). Psychologically, green pillarization is based on professional thinking characterised by shared values and a system of common beliefs.

4. STRATEGIES AND FOREST POLICY TOOLS

4.1 Forest land-use planning

In the previous chapter the principal determinants of Austrian forest policy have been briefly described: the current legal framework, the main interest groups and the typical patterns of their interaction. Now the questions arise: what is the ‘outcome’ of such a neo-corporatist political setting? What kind of long-term goals and strategies does Austria’s forest policy have? What types of policy instruments does it employ? And how effective are these instruments?

Up to now, Austria has no National Forest Plan and no formally codified National Forest Strategy. Therefore, a broad inter-sectoral and holistic approach is not yet available for Austrian forest policy. At the same time, there is a host of programmes and initiatives, sometimes even ambitious in their objectives, but altogether still fragmented and without co-ordination.

⁶For further details see Szecsi (1981), Gerlich (1992) and Pregernig (1999)

In the following, two policy areas will be dealt with in greater detail: first, the instruments and practices of forest land-use planning and second, policy measures to ensure the protective effects of mountain forests.

Forest land-use planning was entered into the forest law in 1975. The objectives of forest land-use planning, as defined under Chapter II of the Forest Act, are the description and foresighted planning of forests on national as well as on local level. The most important tools of forest land-use planning are the '*forest development plan*' (*Waldentwicklungsplan*) and the '*hazard zones plan*' (*Gefahrenzonenplan*).

Hazard zones plans are prepared by the Torrent and Avalanche Control Service (TACS). TACS, an agency directly subordinated to the Federal Ministry of Agriculture and Forestry, is responsible for the protection against torrents and avalanches. It grants subsidies and usually carries out technical measures with own manpower. Hazard zones plans relate to the catchment area of avalanches and torrents as well as to endangered areas of communities. The plans differentiate zones of different risks. A hazard zones plan is not binding unless the authority responsible for local land-use planning incorporates it into the municipal land-use plan. Therefore, short-term economic interests are often given priority over long-term risk management aspects. In contrast to this, the federal government, spending large amounts of money on natural hazards protection, tries to restrict all activities that may have negative impacts on the watershed or may otherwise cause new demands for protective measures. So subsidies for preventive measures are only granted if the communities take into consideration the information contained in the hazard zones plan (Weiss 1999).

The forest development plan covers forest areas and areas to be afforested with regard to the four forest functions mentioned in the Forest Act. These four functions are: timber production, protection against natural hazards, welfare in terms of positive impacts on the environment, and recreation. Based on stipulated rules, a key function (*Leitfunktion*) is determined which is given priority with regard to the proposed measures. In accordance with wake theory⁷, timber production is given priority unless another function is assigned outstanding importance. The plan is merely an informational tool and therefore not binding on the forest owners.

The forest development plan is drawn up by the forest authority. By means of this instrument, the forest authority has successfully maintained its influence on forests in land-use planning and has kept this sphere of dominance free from intervention from outside planning agencies – thereby being perfectly in accordance with an agency's informal objective of territoriality and autonomy (Downs 1967). In this effort, the forest authority has been supported by the forest interest groups, which hope to gain influence on the authority's planning in accordance with their interests (Krott 1989).

On an informal level, both the forest authority and the forest interest groups have tried to avoid a commitment to public plans and binding planning measures; they prefer to react informally and flexibly in any situation. Compared to the ideal of rational objective-means-planning, considerable flaws are too obvious. Despite a lack of straightforward objectives, the forest authority has managed to transform the instrument into an aid for traditional routine administration (Krott 1989; Krott and Glück 1990).

⁷ The so-called '*wake theory*' (*Kielwassertheorie*) assumes that the non-timber products and services of forests are provided in the wake of regular forestry for timber production. Non-timber goods and services are only seen as by-products. Wake theory blinds to these by-products which, subsequently, are provided in insufficient quantities (e.g. protection against natural hazards) or are even destroyed (e.g. nature protection values).

Due to this fact, forest land-use planning has remained a mere symbolic endeavour. Krott and Glück (1990: 166) summarise as follows: “*The presentation of voluminous and colourful pieces of planning symbolically conveys the impression of competence to regulate conflicts of land use interests. The symbolic evidence of success is not associated with substantial planning quality.*”

4.2 Measures to ensure the protective effects of mountain forests⁸

Regulations on protective effects of mountain forests

Forests in alpine areas are of special importance because of their protective effects: they protect the soils against erosion (site protection) and they protect settlements and infrastructure against natural hazards like avalanches, rock-fall, mudflows and landslides (natural hazards protection). The forest law comprises specific regulations for the preservation and the proper management of these forests, the regulation of “protection forests” (*Schutzwälder*) and “ban forests” (*Bannwälder*):

- According to the forest law, *protection forests* are forests on easily erodible sites (site protective forests) and therefore they benefit from a special protected status. Owners of protection forests are obliged to manage their forests in a way that the protective function is maintained. They have to bear the management costs as long as there are revenues from fellings in these forests.
- The regulations on *ban forests* refer to forests that directly protect settlements or traffic lines against natural hazards. Ban forests have to be set up by an official act. The owners of the properties below protective forests may claim specific forest management measures in order to ensure the protective effects of the forest. The authority has to prescribe adequate measures to the forest owners and the forest owners have a claim for compensation with the beneficiary of the measures.

Forest uses and forest condition in mountainous areas

The forest authority reports a *poor condition* of many mountain forests. Forest stands that have been clear-cut in past times are now growing old but lack regeneration. For these forests the authority fears sudden break-down and the loss of protective functions. This situation is on the one hand caused by historic and present forest management practices: clear-cutting and preference of spruce have resulted in even-aged monoculture stands susceptible to wind-throw and bark-beetle attacks. Agricultural and hunting uses on the other hand prevent the natural regeneration of the forests and due to decreasing revenues from forest management, owners cut back on investments in forest regeneration as well. Especially in alpine areas where wood increment decreases but management costs rise, forest owners reduce forest management measures and rather increase the number of cattle for grazing or the number of deer for hunting purposes. These multiple forest uses may result in an overuse of the forest ecosystem in certain places. The maintenance of the forests is endangered at many sites.

⁸ This chapter is based on a study elaborated by Gerhard Weiss at the Institute of Forest Sector Policy and Economics at the University of Agricultural Sciences Vienna (BOKU); cf. Pregernig and Weiss (1998) and Weiss (1999).

The implementation of forest laws in protective forests

The situation described above is a result of the poor implementation of regulations laid down in forest, hunting and agricultural laws. The reasons for this can be seen in the pursuance of *group interests* and the *power distribution* within the actors' network during the implementation process (Ottitsch and Weiss 1998). The relevant group interests within the local community and the main political-administrational actors involved in the implementation process are shown in Figure 2.

Authorities. Both district commissioner and mayor of the local community act as authority and »politician« at the same time. Both are interested in protection against natural hazards but also have to represent the interests of all user groups in the village or the district: next to security interests they have to support the interests of farmers, hunters, and persons benefiting from the protective effects of forests.

Sector administrations. The officials in charge for forestry, hunting and agricultural matters assist the authority in the administration of the sector laws. The single sector administrations pursue different policy goals, all oriented at the interests of their clients. Only the forest administration considers the maintenance of protective forests as a policy goal. Yet, the forest administration holds a rather weak position compared to other administrations because they are backed by more powerful lobbies than forestry.

Beneficiaries of the protective effects of forests. Owners of private and commercial properties as well as operators of road and railway lines below steep slopes are interested in maintaining protective forests but they try to externalise management costs (into the future, upon other parties or upon the public). While the forestry sector is of only low economic and political significance, transport agencies are affiliated to strong administrative bodies (e.g. ministry of transport).

Land users. Forest owners are interested in income from wood production, hunting licenses or grazing. Maintaining or improving protective effects is not in their interest because there is no income from these forest effects (which are public goods). Farm forest owners and holders of grazing rights in forests are interested in grazing, hunters are interested in high game populations. Since there is more forage in 'open' forests, the 'orderly' maintenance of forests is against hunters' and farmers' interests.

Consequently, this has led to a situation of non-sustainable forest use. In order to solve the problem, the forest authority uses subsidies for restoring the degraded mountain forests. Although the underlying causes of forest degradation (i.e. overuse) cannot be resolved by restoring the forests, subsidies and restoration are preferred over regulatory and prevention instruments.

Subsidies are highly welcome because they are (as distributive instruments) to the benefit of all parties directly concerned: the forest administration can secure its influence by getting access to management decisions in protective forests, the forest owner receives income and investments in his forests, hunters and farmers can still carry out their uses, the protective functions for the community are ensured without costs for the direct beneficiaries, and money is invested in the local community and the district. The costs are transferred to the public and there are no incentives for the local users to introduce sustainable land management methods.

5. CHANCES FOR IMPLEMENTING A COMPREHENSIVE FOREST STRATEGY

5.1 National Environmental Plan (NUP)

After having described the circumstances under which forest-related questions are currently dealt with in the Austrian political system, the paper finally comes to the question: what are the chances for implementing a comprehensive forest policy strategy in Austria?

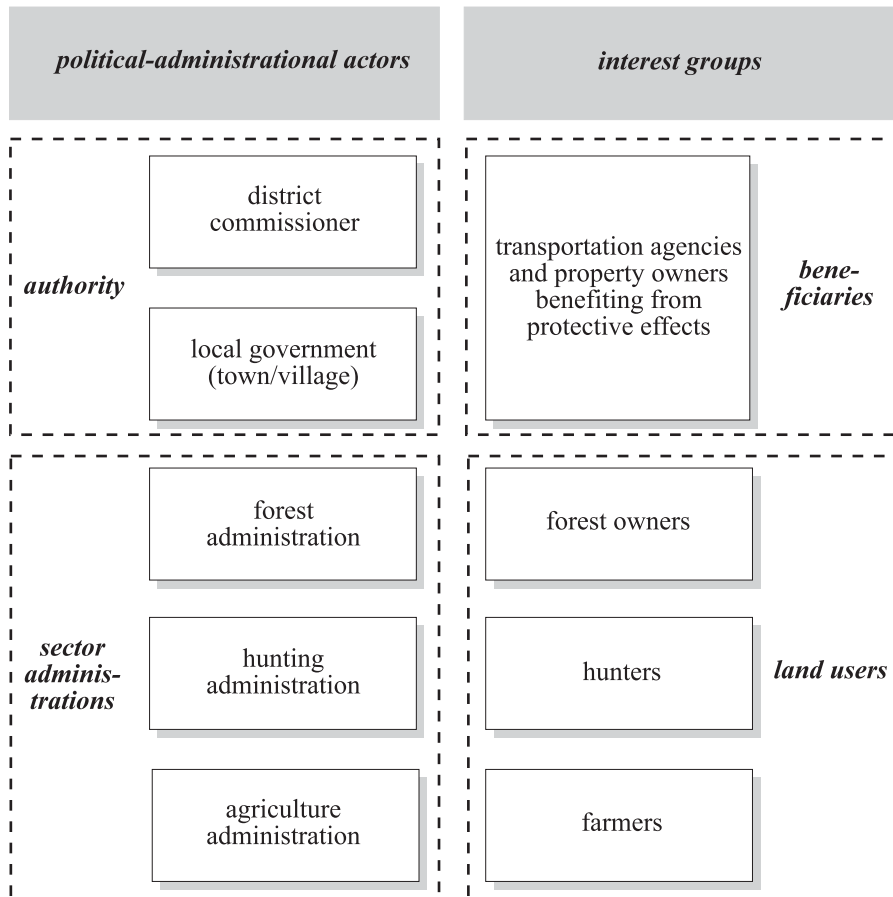


Figure 2. Actors' network in implementing forest law in protective forests. Source: Pregernig and Weiss (1998).

There are both parameters which agree and disagree with the basic principles of a comprehensive policy design. Suppose the Austrian government decided to draw up and implement, for example, a National Forest Programme (NFP), the chances of a sweeping success would be rather modest. There is one main factor impeding the successful initiation of a comprehensive reformulation of Austrian forest policy: powerful stakeholders with strong political and societal backing will not be prepared to share their sphere of influence with other players representing opposing interests. The Austrian style of forest policy making, the negotiation of compromises within a close circle of powerful lobbyists, would be put at risk if the idea of a 'new and equitable partnership' was translated in public policy.

The 'destiny' of the Austrian National Environmental Plan (NUP), an instrument quite similar to NFPs, can give valuable insights into the chances of success a NFP has in the current political setting. The foundation stone for an NUP was laid in 1992 and the plan was completed in 1995. A great number of organisations and institutions, including all ministries, labour and industry associations (neo-corporatist actors) as well as environmental groups, participated in its drafting. With that, the claim of inter-policy co-ordination was taken quite seriously. With regard to its contents, the NUP falls short of expectations: the core elements of the plan are mainly qualitative, long-term environmental goals. The NUP lacks quantitative targets, accurate timetables and a detailed description of the measures to be taken. Furthermore, its possible policy impacts are restricted by a lack of formal policy commitment because the NUP has no legal basis so far. A parliamentary resolution urging the Austrian government to orient any plans and measures according to the targets stipulated is intended to boost the plan. The Austrian National Environmental Plan can be taken as an impressive example on how the interference of powerful social players has reduced an ambitious planning approach to a political symbol without actual social impacts. It cannot be ruled out that something similar could happen to a national forest strategy.

5.2 Chances for policy change

Policy change in most cases cannot be planned in advance. Therefore, the chances of implementing a comprehensive forest policy strategy in Austria could increase unexpectedly, as soon as there are momentous changes in the Austrian political landscape. *External pressure* and *new financial incentives* are two examples of possible changes in the political framework which could make up for the impeding factors mentioned above (Glück 1999).

The smallness of the forestry sector, especially when seen in relation to the Austrian economy as a whole, entailed that, so far, forest policy has been made *by* the forestry sector *for* the forestry sector. With new claims expressed by other sectors or society as a whole, such a closed policy system is no longer viable.

The Austrian population shows a rather high *environmental awareness*. Subsequently, also social demands on the forests and forestry are steadily increasing. In addition, *international initiatives and conventions* such as the Convention on Biological Diversity, the Ministerial Conferences on the Protection of Forests in Europe (Strasbourg 1990 and Helsinki 1993) and the Alpine Convention put further strain on forestry.

Increased external pressure could raise policy commitment at the highest level. The success of an extensive policy planning tool decisively depends on the extent to which key public and private stakeholders commit themselves to implement the measures mutually agreed upon during the planning phase (FAO 1996). At the moment, this national policy commitment is still not available. Changing values and attitudes as well as policy commitments on an international level are about to alter this situation.

Some supplementary positive aspects are coming into sight, as Austrian politics in general are touched by noticeable '*winds of change*'. Long-established functioning principles of Austrian corporatism, and in particular the very style of its co-operative interactions, are becoming controversial. The old introverted policy style is increasingly getting inconsistent with new patterns of politics geared to conflictual interest articulation, open decision-making and clear responsibilities for the implementation of decisions (Gerlich 1992). Even the Austrian forestry sector will not manage to be shut off completely from this trend towards a more open policy style.

Besides external pressure, the provision of *new financial incentives* constitutes a second possibility of promoting the implementation of a comprehensive forest policy programme in Austria. Today, in most cases financial incentives can be legitimised only if the political targets to be attained are founded on a broad societal basis, the criteria to be applied are stipulated in an operational and unequivocal way, and the extent to which the prearranged objectives are reached are evaluated regularly. For a supra-national body granting financial incentives, like the European Union, it is rather difficult to find out whether these conditions have been observed by the individual member states. For such a supra-national body a comprehensive planning tool, like a NFP, could be a possible way to secure these aims. It is quite possible that in future EU programmes the awarding of subsidies is made conditional on national governments having developed or initiated a NFP.

With that, national actors which, up to now, have been in opposition to the development of a NFP could possibly be persuaded to take part in the elaboration and support the implementation of such an instrument. In Austria, this argument mainly applies to forest owners and their representatives, namely the Presidents' Conference of Chambers of Agriculture and the Austrian Federation of Forest Owners' Associations. Rather than doing completely without funds appropriated by the EU, these political actors will be prepared to contribute to the development of a NFP. At the same time, they will try to gain as much influence as possible on the formulation of the targets and measures laid down in the NFP. With influential political actors pacified by means of financial incentives a NFP's chances of success would be increased considerably.

To sum it up it can be said that, at present, the Austrian (forest-)political system by no means favours the development of a comprehensive forest policy strategy. With changes in the political framework, however, this situation could alter immediately.

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List of abbreviations

ATS	Austrian Schilling
BMLF	Bundestministerium für Land- und Forstwirtschaft [[Federal Ministry of Agriculture and Forestry]]
ECE	United Nations Economic Commission for Europe
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
NFP	National Forest Programme
NUP	Nationaler Umweltplan [National Environmental Plan]
TACS	Torrent and Avalanche Control Service

STAKEHOLDERS' PARTICIPATION IN RURAL INVESTMENTS: A CASE STUDY OF A GOLF COURSE BUILT IN AN ALPINE AGRICULTURAL AREA

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ABSTRACT

This paper deals with the evaluation problems related to investments that are inducing remarkable changes in traditional land use patterns in rural areas. The subject is discussed by presenting a case study where the land managed by 5 livestock farms in South Tyrol Autonomous Province, Italy was partially converted to a golf course. The evaluation has been carried out using Cost-Benefit Analysis making separate financial evaluations, with and without the project, of the investment profitability for the main concerned partners. An economic analysis based on two phases has been also realised making an evaluation, firstly, of the direct benefits and costs and, secondly, of the indirect impacts on local tourism. Impacts on local social structure have been evaluated afterwards in qualitatively and quantitatively. An environmental impact assessment has provided a useful insight to some of the non-market investment impacts. Finally, the case study was completed by an appraisal of the costs related to the adoption of a non-participatory approach in the decision-making process and the consequent conflicts among the involved parties. It shows that in an investment implementation which implies radical changes in rural land use, the social and environmental impacts and their perception by the various stakeholders can be more relevant than the potential financial profitability.

Keywords: cost-benefit analysis, environmental impact assessment

1. INTRODUCTION

Many recent investments in the primary sector are not so much aimed at improving production efficiency in farming and forestry but at providing public services such as agrotourism, rural hospitality, organisation of sporting activities, environmental education, nature conservation, etc. Often this process implies a complete tertiarisation of traditional farming practices, with a radical change in the organisational characteristics and the business objectives of the agricultural and forest enterprises. As shown in Table 1, this change has many inter-connected effects (financial, economic, environmental, cultural, etc.) that cannot be easily evaluated with a single approach. For investments that entail radical transformation in land use, interbusiness relationships, landscape and the cultural identity of the people involved, the traditional instruments of the Cost Benefit Analysis and the Environmental Impact Assessment must be better specified and integrated with an evaluation of the effects on income distribution. Also how such effects are perceived and evaluated by the different stakeholders involved in the investment must be considered.

To explore such problems, a case study is presented which discusses the land use changes in an agricultural area converted into a golf course. The decision-making process related to the investment was based on limited information and the participation of the primary and secondary stakeholders.

The golf course is located in South Tyrol, Italy on an area of 30.8 ha of alluvial soils. The area was previously managed as meadows and run by five livestock farms, which have now leased some of their land to a golf club for a period of 25 years. The farmers have consequently become members of the golf management company and some are now employed by the golf club as green keepers or other workers.

The period of investment runs from 1994, when the first costs were incurred, until 2020, when the contract expires. However, this analysis is only concerned with the period after the initial phase, four years from when the investment started.

The method of Cost Benefit Analysis was used to compare the financial benefit with a separate investigation of the situation “with” and “without” the project for the different involved parties (Gregersen and Contreras 1979)¹. This was then integrated with an

Table 1. Main changes linked to the tertiarisation process of the agricultural sector.

Changing role of	From → to
Producers	Farmers → Environmental resource managers
Social position of producers	Isolated producers → Social actors: communication skills
Goods	Goods → Services
Production factors	Land, fixed equipment → Entrepreneurial capacity
Marketing techniques	4 Ps (products, price, place, promotion) → 2Ps (public support, political power)

¹ All values are expressed in units of 1000 Italian Lire; 1 EUR = 1936 Lire

economic analysis of the results of the project. This method of analysis closely follows the “stepwise” approach proposed by Cesaro et al. (1998), even if the phases have been differently structured and orientated. An Environmental Impact Assessment was used to consider non-priced effects of the new course. Finally, since the decision-making process related to the investment was particularly conflicting, this study concludes with some considerations on the incurred costs which arose from the lack of stakeholders’ participation.

2. RESULTS FROM THE COST-BENEFIT ANALYSIS

2.1 The organisation of the financial analysis

To highlight the different income impacts of the investment, the financial analysis was formulated in 4 phases, following an evaluation for each farm of the results of ordinary management in the absence of the golf course (situation “without” the project).

In the first phase the situation “without” the project was compared with the financial situation “with” the project by only taking into account the income gained from the farmed land and from leasing part of the land to the golf club.

A similar comparison was undertaken in the second phase, which not only considered the revenue gained from leasing the land but also took into account the income the farmers gained from non-farming activities. These activities became possible through the realisation of an investment which reduced farming employment, and also contributed to some of the farm workers being employed by the golf course.

The third phase, an analysis of the results to the golf management company, was followed by the fourth and final phase where all the aggregate costs and revenues of the farms and the golf club were compared “with” and “without” the project, thus giving a valuation of the entire project.

2.2 Economic analysis organisation

The public benefits of the investment were evaluated by considering both a “conventional” and an “extended” economic analysis. The “conventional” economic analysis was undertaken by using the information gained from the last phase of the financial analysis. However, taxes and subsidies were not included, and some items of the cash flow were modified by using conversion factors. While eliminating the effects of taxes was relatively simple, the assumption of a shadow price for the milk, the main product of the farms, was problematic. An average international value was assigned to the milk, but because of the uncertainty of this and other variables a sensitivity analysis was performed (see Chapter 3). No impacts on employment were considered, as the provincial data on unemployment rates indicated that even with the presence of the golf course none of the farmers are unemployed.

In the “extended” economic analysis the indirect effects, which do not affect the area in question but the general economy of the province, were examined. In particular, the

possible impacts of the golf course on the tourist economy and on the organisational structure of farming were studied.

The impact on tourism was evaluated by looking at the variation in the number of overnight stays since the start of the project. Following what was stated by Billion (1986), the boundaries of the area investigated were defined by being within a 30-minute travel distance from the golf course. In accordance with the indications of the *Federation Française de Golf* and of the *Tiroler Golfplatzkonzept*, an increase of 6882 annual overnight stays in the local hotels has been estimated, when considering the 7905 golf players and companions who used the course in 1998.

The number of overnight stays caused by the establishing of the golf course was then multiplied by the daily stay added value estimated in a recent study by the Provincial Institute of Statistics.

2.3 The result of the financial and economic analysis

Table 2 reports the results of the different phases of the Cost Benefit Analysis², showing that since the realisation of the project there has been a net reduction of the financial revenues from farming, but an increased revenue for the 5 farms due to the non-farming incomes. However, for the golf management company the investment was a net loss with negative affects on the overall financial results for all the economic parties involved.

The difference between the investment indicators of the financial and the conventional economic analysis is due solely to the elimination of the financial transfers, the ratio between revenue and costs (R/C) increases from 0.91 to 1.09 and the Net Present Value (NPV) from 683 to 536 million lire.

Table 2. Results of the Cost Benefit Analysis.

Type of Analysis		NPV	R/C
Net revenue for the farmers (without project)		1,908,235	1.79
Financial analysis	farmers (revenue from agriculture and forestry)	-159,951	0.75
	farmers (all sources of income)	130,950	1.12
	golf company	-902,606	0.88
	Total	-683,352	0.91
Economic analysis	Conventional	536,880	1.09
	Extended (non market benefits and costs)	4,078,882	1.69

² The calculation of the Internal Rate of Return was not possible since the payment of subscription quota of the Golf Club allows the investors to have a net positive cash flow in the first years of the investment.

Table 3. Sensitivity analysis (financial analysis – revenues from selling of golf services).

Tests variables	Base scenario	New assumptions	NPV	R/C
<i>5% increase</i>				
Starting subscription	246 000	258 300	-273 414	0.97
Annual member fees	58 734	61 670	(<i>variation:</i>	(<i>variation:</i>
No.of recreationalists	244 000	256 200	+409 938)	+0.06)
<i>10% increase</i>				
Starting subscription	246 000	270 600	-65 073	0.99
Annual member fees	58 734	64 607	(<i>variation:</i>	(<i>variation:</i>
No. of recreationalists	244 000	268 400	+618.289)	+0.08)

Table 4. Sensitivity analysis (financial analysis – Agenda 2000 scenario: -10% milk price, -30% meat price).

Tests variables	Base scenario	New assumptions	NPV	R/C
milk (without project)	186,960	168,264		
milk (with project)	74,560	67,100	-470,606	0.94
meat (without project)	71,940	50,358	(<i>variation:</i>	(<i>variation:</i>
meat (with project)	49,440	34,600	+212,700)	+0.03)

The two main elements that have influenced the results of the economic analysis in attributing a larger benefit to the situation “with” the project are:

- firstly, in the situation “with” the project, the agricultural entrepreneurs are subjected to a tax regime more onerous because of the new non farming incomes; consequently, eliminating the item “taxes” from the economic analysis results in an increase of the relative benefits;
- secondly, it is assumed that milk³ has a price inferior to that of the market, so that in the “conventional” economic analysis there are greater effects in the situation “without” the project as milk production is more than double than the situation “with” the project.

Moving from the “conventional” to the “extended” economic analysis, the investment becomes extremely convenient, due to the inclusion of the effects of the golf course on tourism. However, it is necessary to consider that the variables related to tourism are those most subject to annual oscillation and are generally very difficult to quantify.

³ The price of milk in the conditions of a free market was assumed to be equal to 450 lire per litre (Boatto, 1998, personal communication).

Table 5. Demand for different hotel categories.

	5 stars	4 stars	3 stars	2 stars	Total
Hotels (investors in the golf company.)	1	10	6	1	18
No. of beds	210	826	288	24	1348
%	15.6	61.2	21.3	1.7	100
No. of overnight staying	49	1117	190	0	1356
%	3.6	82.4	14.0	0	100

3. SENSITIVITY ANALYSIS

An analysis conducted while the investment is running allows the reduction of the uncertainty in the assumptions related to many variables. However, for some items, subject to possible errors and inaccuracies, a sensitivity analysis was carried out. The users of the golf club, i.e. the members of the club and the day users, represent a key variable in influencing investment results. In fact, the investigation is carried out over a long period of time, equal to the duration of the lease, therefore making it difficult to make assumptions on the trends of tourism/recreation demand in the long run.

Prices of farm products are other very uncertain variables. The analysis “with” and “without” the golf course was carried out under the assumption that the prices, particularly the price of milk and meat, will remain stable for the entire period examined.

A sensitivity analysis was performed on these variables, the results of which are shown in Tables 3 and 4. It was found that the financial indicators remain quite stable even when relatively large changes in the variables were tested.

4. NON-PRICED IMPACTS ON THE SOCIAL STRUCTURE

The economic analysis was followed by a qualitative/quantitative evaluation of the impacts on the social structure, particularly on the local tourist sector. Problems related to the continuity of the farming activity as an instrument in rural countryside conservation were also investigated.

From the data provided by the golf management company regarding the category of hotels that have contributed to the foundation of the company, the number of guests who played golf in the 1997 season was calculated (see Table 5), confirming the elite character of the sport. The higher category hotels were more involved in the investment than other. Evidently, the creation of the course will change the actual tourist demand (based on agritourism facilities, low and medium category hotels, bed and breakfast, house renting for relatively long periods etc.) toward a demand mainly based on high category hotels used for a short stays. The demand diversification will decrease and uncertainties about revenues from tourism due to high specialisation will increase.

The question whether establishing the golf course has encouraged the abandonment of traditional farming activities also needs to be considered as half of the farmland is now used by the course and some of the farmers are employed as green keepers. However, some farming is still carried out on the remaining part of the land. Nevertheless, the size of the course will be probably increased to 18 holes to achieve a good level of profitability. In this case, of course, there will be very little agricultural activity left.

Regarding the maintenance of a typical country landscape, it must be remembered that the grass of the whole area of the course needs to be cut (as it would be, of course, if farmed) so that the game can be played. However, whether the course does in fact contribute to the quality of the traditional landscape needs to be considered. For centuries the area has been transformed by human activity ("*Kulturlandschaft*") but has been managed to preserve a relevant countryside and aesthetic value⁴.

In order to examine these ideas it was thought useful to separate the landscape value of the territory into aesthetic and historical components (Gallerani and Zanni 1998). The impacts of the golf course on the aesthetic components of the area were deemed not to be relevant. The golf terrain is characterised by divisions of land into small areas, similar to the small fields of a typical rural mountainous landscape (Schemel 1987).

The "historical" value of the area "without" the project is an subjective concept, but such a component of the landscape value has a considerable importance for the local population. The area investigated has been managed as farmland notwithstanding large disturbance (land slides) occurred in the past. This capacity of resistance, together with the values linked with rural life in general (i.e. the simplicity and the autarchy and, more generally, the attachment to ones own origins) constitutes a historical value that is considered fundamental in the conservation of the South Tyrol countryside. The golfing activity can in no way represent such values, and the designation of a pastoral area to the sport for an elite of urban users is perceived as being completely opposed to the farming activity.

5. THE IMPACTS OF NON-MONETISATION OF THE GOLF COURSE ON THE ENVIRONMENT

It was also deemed suitable to study the impacts that the golf course had on the environment during the phases of construction and operating. This evaluation should logically be part of the "extended" economic analysis, since the effects on the environment are mainly indirect and without a market. However, it was preferred, seeing the complexity of monetising such effects, to tackle this problem in a separate way, mainly in qualitative terms.

For the evaluation of the environmental impacts, the methodological approach developed for Germany by Schemel (1987) was followed. In effect, the environmental problems related to golf courses have only been faced in Italy in recent years, while in Germany they have been studied as far back as the 1980s.

⁴ To underline this value a large part of the area was designated as "*Bannzone*" (conservation area) in order to emphasise its typical rural character.

Table 6. “Area balance”.

Without project			With project		Impacts	No of units quality improvement/ decrease
Area	Category		Area	Category		
0.53 ha	Flat grassland	IV (a)	<i>Greens</i>	IV (c)		2
0.04 ha	Undulating grassland	III (b)	<i>Greens</i>	IV (c)		4
0.18 ha	Flat grassland	IV (a)	<i>Tees</i>	IV (c)		2
0.16 ha	Flat grassland	IV (a)	<i>Bunkers</i>	IV (c)		2
0.1 ha	Undulating grassland	III (b)	<i>Bunkers</i>	IV (c)		4
15.72 ha	Flat grassland	IV (a)	<i>Fairways and semiroughs</i>	IV (b)		1
2.12 ha	Undulating grassland	III (b)	<i>Driving range</i>	IV (b)		3
7.9 ha	Flat grassland	IV (a)	<i>Hardroughs I</i>	III (c)		1
0.6 ha	Flat grassland	IV (a)	<i>Hardroughs II</i>	IV (a)		0
1.5 ha	Undulating grassland	III (b)	<i>Hardrough III</i>	III (b)		0
68 m	Flat grassland	IV (a)	Traditional walls	II (c)	5	
9 m	Undulating grassland	III (b)	Traditional walls	II (c)	2	
71 m	hedges	II (a)	<i>Fairway</i>	IV (b)	7	
No. 100	Flat grassland	IV (a)	trees	II (b)	5	

On the basis of the approach proposed by Schemel, in order to compare the ecological state of the area before and after the realisation of a project, a comparison has been made through an “area balance”. For each homogenous area (internally subdivided in different categories), an assessment related to the situation “with” and “without” the project is reported. The changes of the degree of naturalness and the ecological value are estimated through a comparison of each category. Every change must, however, be referred to the area extension, in case a spatial reduction of biotypes occurs, or in qualitative terms, in case a simple variation in assessing occurs (Table 6 shows that a \rightarrow b = depreciation of a unit along a scale of predefined theoretical evaluation).

When interpreting the results of the “area balance” it would be misleading to make an assessment based on abstract calculation, such as multiplying the biotype area by the ecological value and subsequently working out the sum. An evaluation scale like that presented in Table 6, on the one hand, avoids an abstract quantification, but, on the other hand, helps those who must examine the impacts of the project.

6. FINAL REMARKS ON THE DECISION MAKING APPROACH

Traditional evaluation methods of investments, such as Cost Benefit Analysis and Environmental Impact Assessment, do not allow the important aspect of income distribution and the consensus of the social parties involved to be highlighted. The circumstances that have brought about the planning and the realisation of the golf course symbolically represent the difficulties incurred by an investment that was not accepted by the local people. The supporters of the course have concentrated their efforts in gaining the acceptance of the local administrators, undervaluing the problems of communication and therefore the verification of the needs and aspirations of the local stakeholders. Such behaviour can be justified for private investments of limited size, but not for interventions with impacts perceived as being so relevant for the social structure and the natural resources.

The following events highlight the underestimation of the problems of stakeholders' participation in the decision making process for the project:

- a petition of 2000 signatures against the construction of the course, almost all from the inhabitants of the valley, and out of a total population of 8000, signifying a widespread hostility;
- the public opposition from several important associations (also non-environmentalists) of the valley, amplified by the local press;
- three claims to the Provincial court that, if they are upheld, will cause the immediate closure of the golf activity.

In actual fact, it is very likely that these factors have affected the financial benefit of the investment. In particular the uncertain legal situation, related to the result of the still pending claims, could have had repercussions on the number of golf club members (and even the future and the duration of the investment itself).

Therefore, an attempt was made in trying to monetise the loss incurred by the golf company due to the lack of a participatory approach. It was assumed that sufficient consultation with the local people had been undertaken, and that the golf club had a similar number of members to that of other courses of comparable size and location. The estimated loss is shown in Table 7.

When the difference in the NPV of the real and the assumed situations are calculated, the financial loss due to the non participatory approach totals 68 328 000 lire. This underlines the importance of a participatory approach from the limited point of view of financial profitability. The acquisition of the local consensus is needed even if the developer is not legally or other wise bound to carry out such consultation.

Table 7. A tentative evaluation of the non-participatory approach.

	NPV	R/C
Ongoing financial results	-683 352	0.91
Ordinary financial results	-72	1.00
Minimum costs due to the non-participatory approach	683 280	

Generally speaking, the feasibility of some investments can be more conditioned by how impacts on income reallocation and environment resources are perceived and shared by the stakeholders, than by the potential financial profitability.

In the light of such results the application of participation techniques (for which a vast literature of methodologies and an ample range of case histories are available for developing countries) can be of particular interest both in the European agriculture context. In Europe, a large, consolidated experience in organising participation to the decision-making process at the macro level has been acquired, but we still have limited practice of techniques such as *Participatory Rural Appraisal*, *Rapid Rural Appraisal*, *Diagnostico Rural Participativo*, *Méthode Accélérée de Recherche Participative*, etc. While in the third world the main problem is institutionalising or scaling up the participatory approaches (Blackburn and Holland 1998), in the European rural context there is a urgent need for scaling down the participatory approach from the macro level to the level of the small-scale investments.

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SOCIAL COSTS AND POLICY ISSUES RELATED TO FOREST FIRES

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ABSTRACT

This paper presents a tentative estimate of damage costs arising from forest fires occurring in Italy over a period of eleven years. Some concepts of environmental accounting are applied for the estimation of both the social costs and the defensive expenditure. From the results, some ideas are derived for the decision-making process related to fire fighting-prevention, such as the role of different actors-lobbying powers like the forest workers seasonally employed in fire fighting, the (mainly military) industry concerned with the selling of fire fighting technology, and the State forest administration involved in co-ordination of fire prevention and fighting.

Keywords: forest fire, environmental accounting, defensive expenditure

1. INTRODUCTION

In the Italian System of National Accounting (SNA), the contribution of the forestry sector to the Gross National Product is only 0.05%. While many policy-makers believe that there is a need for increasing public funding efficiency and monitoring forest policies, such policies cannot be evaluated due to the lack of economic approaches in evaluating the real contribution of this sector to the national economy.

In the Italian current SNA for the forestry sector inadequacies are relevant in both the methodological approach and in the organisation of field surveys. The following aspects in particular may be pointed out:

- included, among the items making up the national income, are some defensive expenditures which are borne mainly by the public sector to control fire damage, pollution or other negative effects on the forest sector deriving from external economic activities (Adger and Whitby 1993);

- not included are the gains and losses with respect to variations in the stock of natural resources (e.g. forest flora and fauna) (the El Serafy 1989); and
- not included is the estimation of non-priced externalities, whether negative, such as environmental damages caused to forest resources by economic activities (pollution effects, for example), or positive (such as soil protection, water supply, landscape and biodiversity protection, carbon fixing, provision of recreational areas, etc.).

In recent years, research and applications have been developed in Italy regarding these issues. This paper presents a case study that consists of a tentative estimate of damage costs from forest fires occurring in Italy over the past eleven years. The results could be a good starting point for an evaluation of the costs and benefits deriving from a programme of forest fire prevention.

2. THE OFFICIAL ESTIMATES OF FOREST FIRES COSTS

As in all the other countries of the Mediterranean basin, forest fires in Italy are a problem of great relevance from an environmental and economic point of view. The Italian Statistical Office periodically publishes two sets of data related to the cost of forest fires: the 'value of destroyed or damaged stock' and 'restoration costs' for forests damaged by fire (Table 1).

Table 1. Technical-economic data relating to damage from forest fires (ha and lire). Sources: ISTAT (Forest statistics and monthly statistical bulletins) on data from the forest administration (economic data); MRAAF (1995) (data on areas of forest fire).

	Forest land burnt (ha)	Stock damages (current values) ¹	Restoration costs (current values) ¹	Stock damages (real values) ¹	Restoration costs (real values) ¹	For 1 ha	
						Stock damages (real values)	Rest costs (real values)
1985	76,548	52	103	89	175	1.2	2.3
1986	26,795	20	40	32	63	1.2	2.4
1987	46,040	54	64	82	98	1.8	2.1
1988	60,109	44	94	64	137	1.1	2.3
1989	45,933	27	45	37	62	0.8	1.3
1990	98,410	89	122	114	157	1.2	1.6
1991	30,172	26	33	31	40	1.0	1.3
1992	44,522	32	46	37	53	0.8	1.2
1993	116,132	111	68	122	75	1.1	0.6
1994	46,773	63	86	66	91	1.4	1.9
1995	20,994	36	35	36	35	1.7	1.7
total	612,428	-	-	711	985	-	-
average	55,675	-	-	65	90	1.2	1.7
std.dev.	28,628	-	-	31.8	45.4	0.3	0.5

All values are expressed in Italian Lire; 1 EUR = 1,936 Lire).

3. A TENTATIVE EVALUATION OF THE SOCIAL COSTS OF FOREST FIRES

A correct economic analysis of forest fires should be based on a hypothetical comparison between the cost and benefit flows with and without fires (see Gregersen and Contreras 1992). In this hypothetical comparison, not only the market effects connected with fires, such as loss of timber and non-wood products, should be taken into account but also the non-priced products and services. Non-priced costs, or the lack of benefits, probably represent a considerable part of the social costs of fires and by definition are difficult to evaluate. Reference is made in such cases to recreation, soil protection, landscape enhancement and conservation of biodiversity, etc. Market costs and benefits generally have a lower weight in Italy, given the nature of the forests affected by fires on abandoned or semi-abandoned land.

An attempt was made to estimate the value of four functions affected by forest fires: timber production, provision of recreational areas, soil protection and climate stabilisation. Due to the uncertainty in some assumptions, for the three services a range defined by two threshold values (minimum and maximum) for each function was defined. The following methodology was used (for a more detailed analysis of some methodological assumptions see Marchetti and Pettenella (1994)):

Timber production. Damage due to the loss of income from timber sales was calculated directly from the estimates made by the forest administration regarding destroyed or damaged timber (see Table 1 – 5th column).

Provision of recreational areas. The estimation of the value of the loss of recreation involved two problems: valuation of (a) the area concerned and of (b) the damage per hectare of burnt forest. The first figure (a) was estimated by taking the percentage of protected recreational areas affected by forest from the total area of burnt forest land. In estimating the average value of the recreational service (b), reference was made to some evaluations of this function carried out in different environmental contexts in Italy by various authors (Boatto et al., 1982; Frigo, 1988; Gatto, 1988; MAF, 1991; Marchetti, 1994; Marinelli and Romano, 1987; Merlo, 1982; Tosi, 1989). Also the information on the average number of annual visits per land area unit was used in the estimation of the value of the loss of recreation.

Soil protection. The cost due to a decreased soil protection and water regulation was estimated on the basis of the opportunity cost criterion. The most effective alternative land use to forestry located on slopes, in terms of soil protection and water regulation, was considered to be grassland. The calculation was based on the costs of realisation and for the annual mowing of meadows located on slopes of average gradient. The foreseen contributions for maintenance of meadows, from the European Union (Regulations 2328/91 and 2078/92) and the initiatives by single local authorities in areas where meadows and pastures tend to be abandoned, were certain values also included in the calculation. The area was estimated on the basis of the percentage of land under the ‘soil protection bond’ with respect to the total forest area, as reported by the National Forest Inventory.

Climate stabilisation function. This function was calculated by assuming a range of values as the shadow price for one tonne of carbon, as reported in the international literature on this subject. These values are later referred, using appropriate conversion coefficients (see Cesaro and Pettenella 1994), to average net annual increment, weighted on the basis of National Forest Inventory data.

Clearly the damage of a forest by fire has the effect of reducing the supply of goods and services in a period that is not limited to the year of the fire. There is empirical evidence that the functions undertaken by the forest before the fire are reinstated over a period of time varying according to the case. Thus, if one wishes to estimate the economic damage from a fire in a given year, the effects connected with the decreased supply of goods and services from the forests burnt in the previous years should also be taken into account. Referring to the four functions considered in the study, this situation may be represented analytically as follows:

$$C_t = \sum_{j=1}^4 s_{jt} + \sum_{j=1}^4 \alpha_j s_{j,t-1} + \dots + \sum_{j=1}^4 \alpha_j s_{j,t-m}$$

- C_t = overall damage from fire in year t ,
 s_j = costs related of product or service j provided by the burnt forest,
 m = duration (in years) of the period in which the consequences of the fires are observable in terms of lack of products and services
 α_j = weighted coefficient relating to the restored product or service j supplied by forests burnt in previous years (from $t-1$ to m)

In making the estimate, it was assumed that α_j is common to all the functions taken into consideration and that it varies following a linear trend during the period included between the year of estimation and m . The other assumptions are reported in Table 2. At the end of the study, it was considered worthwhile to undertake a sensitivity analysis for the variables that are more conditioned by subjectivity of choice.

Table 2. Values assumed in the estimation of damage from forest fires.

Variables	Assumptions
Discount rate, %	5
Value of bare land (see value of grassland – M lire/ha)	2
Age of the forest stand (years)	10-30
Planting costs (M lire/ha)	5-0.1
Restoration costs (M lire/ha)	1.7
Period in which the consequences of the fires are felt (m – years)	5
% burnt area used for recreation	19.2
Value of recreational services (M lire/ha)	2-3.5
% burnt area with function of soil erosion protection	88.7
Cost of alternative agricultural works for soil protection (M lire/ha)	0.4-0.6
Net annual increment (cm/ha/year - coppices and highforests)	5.18-7.90
Shadow value of 1 tonne of C fixing (lire/tonne)	35 000-60 000
Average value of standing timber (lire/cm)	50 000

Table 3. Estimate of damage caused by fire on the basis of relative loss of the four functions (values in billions of constant 1995 lire)¹.

	Timber and fuelwood	Outdoor recreation		Soil erosion control		Carbon sequestration		Total value of the damages		Cumulated values of damages	
		min	max	min	max	min	max	min	max	min	max
1985	89	29	51	27	41	4	12	149	193	n.a.	n.a.
1986	32	10	18	10	14	1	4	54	69	n.a.	n.a.
1987	82	18	31	16	25	3	7	118	144	n.a.	n.a.
1988	64	23	40	21	32	3	9	111	145	n.a.	n.a.
1989	37	18	31	16	24	3	7	74	100	324	427
1990	114	38	66	35	52	5	15	192	248	427	563
1991	31	12	20	11	16	2	5	55	72	365	484
1992	37	17	30	16	24	2	7	72	97	324	435
1993	122	44	78	41	62	6	18	214	280	453	606
1994	66	18	31	17	25	3	7	103	130	314	420
1995	36	8	14	7	11	1	3	53	65	193	258
Total	711	235	410	217	326	34	95	1196	1542	2401	3195
Average	64.6	21.3	37.3	19.8	29.6	3.1	8.6	108.8	140.2	343.0	456.4
Std.dev.	31.8	11.0	19.2	10.2	15.2	1.6	4.4	53.5	69.4	79.2	104.6

Table 3 shows the results based on the analysis described above. The estimate of the economic damage due to the four main functions led to much higher values than those reported in the official estimates, confirming that the phenomenon of forest fires has an impact going well beyond the direct market costs as presented in official statistics.

For an overall valuation of the economic impacts of fires on national accounting data, another primary variable is that of defensive expenditure, i.e. the set of costs borne by public and private parties for fire prevention and control. For an estimate of defensive expenditure borne by private owners, reference was made to the results of some studies on the costs of services provided by farmers for environmental conservation (Franceschetti and Rela, 1991; Tempesta and Sartore, 1993; Tempesta, 1994). No source of information was found regarding expenditure borne directly by volunteers and other private subjects not reimbursed by public contributions. Table 4 reports an estimate of average annual defensive expenditure for the period 1989-1995.

The economic impact of forest fires is equivalent to an annual average of approx. 523-736 billion lire over the period 1989-1995 (Table 4). The average annual values of timber volume destroyed or damaged by fire as recorded by ISTAT (Istituto Nazionale di Statistica (National Institute of Statistics)) are, respectively, equal to 8.18% and 12.4%. The total average cost per hectare of forest fire is equivalent to 8.2-11.6 million lire, as compared to an average damage value, calculated on the basis of official statistics, of 1.1-1.6 million lire.

¹Note: the values in the last two columns for the years 1985-88 are incomplete, as data regarding fires occurring before 1985 were not elaborated; the statistical indicators presented in the last three lines thus refer simply to the period 1989-95.

Table 4. Average annual values of damage from fires and defensive expenditure over the period 1989-95 (Total: in billions of lire; 1 ha: values per ha in millions of lire).

	Average value of the damages		Defensive expenditure						total costs	
			State		Regions and local authorities		Private owners			
	min	max	min	max	min	max	min	max	min	max
Total	343	456	40	60	110	170	31	51	523	736
1 ha	5.4	7.2	0.6	0.9	1.6	2.5	0.5	0.8	8.2	11.6
%	65.6	62.0	7.4	7.9	20.4	22.4	5.7	6.7	100.0	100.0

Sensitivity analysis was performed on the results of these estimates (Table 5), from which it can be deduced that three critical variables in determining the final values of the estimates are, in the order of magnitude the interest rate, defensive expenditure and the value of bare land. The choice of an appropriate interest rate is a critical factor in every valuation involving problems of inter-temporal comparison of flows of environmental goods and services, while correct valuation of defensive expenditure, once an appropriate system of classification of services has been defined, is exclusively a problem of data availability and accessibility.

4. SOME POLICY ISSUES RELATED TO A BETTER ESTIMATION OF SOCIAL COSTS

The size of the social costs may constitute for the policy makers a logical reference point to weigh and justify the investments needed in fire fighting. However, it is necessary to avoid a misleading use of the results of an analysis such as the one just presented.

The case of forest fires are different from other natural disasters that induce degradation of the forest resources like windfalls, draught damages, pests and parasites attacks, etc. In the Italian context, forest fires are directly dependent from erroneous social behaviour. Such a situation determines the need for a careful evaluation of the distribution of the defensive expenditure, far beyond the use of the traditional public investment criteria i.e. the search for an equilibrium between prevention costs/extinguishing costs and active protection costs/repression costs.

A problem that should be better analysed is the efficiency of the different instruments used in the prevention and fighting of forest fires. There are two possible "options":

- prevention through campaigns of collective responsibility awareness based on the direct involvement of those who are occasionally (e.g. forest workers) or constantly (e.g. farmers and rural dwellers) in the proximity of forest areas;
- fire fighting through monitoring technology e.g. automatic systems of remote sensing in the infrared and in the visible light plains and prompt intervention e.g. by using all terrain vehicles and helicopters.

Table 5. Sensitivity analysis of cumulated damage costs of forest fire (1989-95).

Variable		Base-line value	Test value
Value of recreational service		2-3.5 M lire/ha	1.5 M lire/ha
Value of soil protection service		0.4-0.6 M lire/ha	0.3 M lire/ha
Value 1 tonne of C		35-60000 lire/tonne	20000 lire/tonne
Net annual increment		5.2-7.9 cm/ha/year	3 cm/ha/year
Standing tree prices		50000 lire/cm	30000 lire/cm
Defensive expenditure		181-281 bil.lire	150 bil.lire

Variable	Variation in damages estimate	Test value	Variation in damages estimate
Value of recreational service	-6.2%	4.5 M lire/ha	8.6%
Value of soil protection service	-4.7%	0.8 M lire/ha	7.1%
Value 1 tonne of C	-1.5%	75000 lire/tonne	1.3%
Net annual increment	-6.1%	10 cm/ha/year	5.6%
Standing tree prices	-3.4%	80000 lire/cm	5.1%
Defensive expenditure	-12.7%	300 bil.lire	11.1%

A correct evaluation of the social costs of the fires should not automatically prompt choices that favour the second, “technological” option. As a matter of fact, following catastrophic events of recent summers, a common belief that sometimes now tends to prevail with the decision makers and in a (badly informed) public opinion is that the size of the damage is considered more or less inversely proportional to the number of aeroplanes, helicopters and remote sensing systems that are available for fire fighting. Given the prevailing human causes of the fires, it is only in very rare cases when the “technological” option alone can be considered as an efficient solution for the problem of forest fires. The purchase of normally very expensive equipment has only a limited effect, if not accompanied by a wider awareness and active involvement from society and forest land managers in the prevention, reporting and prompt fighting of fire.

In the Italian socio-political context to change the way of thinking from a short-term policy of fire control mainly based on huge technological investments to a longer term policy of removing the structural causes of forest fire is not easy, as there are many ‘interests’ involved in fire fighting, among which are:

- the interests of the industry, in general, military that sells technology to locate and extinguish fires;
- the need for the State forest authority, who at the moment is opposing a process of decentralisation, to reaffirm its own role of national co-ordination and action in the struggle against forest fires;
- the needs connected to the employment of seasonal workers in the operations of locating and putting out fires and the restoration of the forest vegetation. In Italy around 100 000 forest workers (30 000 alone in Sicily, and more than 10 000 in Calabria) are employed seasonally in forest activities.

These are the factors of inertia that are effectively opposing a reorganisation of the public service. The understanding of this situation and of the costs connected to the present organisation of the interventions, can be the first step towards a change in the forest policy.

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LOCAL IMPACTS OF NATURE CONSERVATION: A COST-BENEFIT APPROACH

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ABSTRACT

Nature conservation is continually under discussion. The crucial questions are how much forests and other habitats should be protected, where should conservation areas be located, what are the economic costs and benefits of conservation and how much compensation should be paid. In this paper nature conservation is considered in the context of cost-benefit analysis. Special emphasis is given to local economies. The costs of nature conservation consist of foregone benefits of other land use. When considering Finland, the costs of conservation are mainly lost stumpage incomes or lost incomes in peat production. In addition to these, also lost earnings are partly costs of conservation. The benefits connected to conservation are mainly non-marketed goods with non-use values. While conservation's costs are mostly local, benefits spread to whole society.

Keywords: nature conservation, local economy, cost-benefit analysis, contingent valuation

1. INTRODUCTION

It is commonly agreed that both the need and justification for biodiversity conservation and enhancement exist. Biological diversity is valued because of its direct benefits to human beings. On the other hand, it is also valued because of its existence value. As forests cover 76% of the total land area of Finland, the emphasis of biodiversity protection lays on them. In commercial forests biological diversity can be maintained by protecting valuable key habitats and by avoiding monocultures. However, the structure and size of the commercial forests differ greatly from that of the virgin forests. As certain species survive only in special undisturbed conditions, some habitats are under a threat in commercial forests. Specific conservation areas, where economic acts are prohibited or limited, are therefore needed. This article focuses on those areas.

The primary reason for nature conservation is the need to secure the existence of rare and valuable species and habitats. This is why the needed extent of conservation has to be considered in the first place on ecological grounds. In addition to ecological reasoning, nature conservation also needs to be considered from the economic aspect. Economic benefits of conservation are often non-marketed goods, which although are valuable if people are willing to pay for their existence. However, as for example nature based tourism has shown, benefits which cause money flows are more easily observed.

The costs of nature conservation consist of the opportunity costs of other land use. In Finland that means mainly losses in forestry and peat production. A wide range of estimates concerning biodiversity protection in commercial forests and the costs of conservation has been made at national level. Some of these estimates are relatively minor; e.g. Hildén et al. (1998) estimated that the costs of Natura 2000 -programme to Finland's forestry come to 241-796 million FIM, which is less than 0.6% of the total capital value of stumpage incomes. On the other hand, Järveläinen et al. (1997) estimated that biodiversity protection in commercial forests could decrease forest net incomes at woodlot level by 15%.

In Finland conservation areas are mainly located in northern and eastern parts of the country. Those regions are still very dependent on primary production and, in addition to this, suffer from high unemployment. This causes the fact that the effects of conservation are more severe in those regions than they are in the whole country on the average. The benefits of conservation, unlike costs, spread more evenly to whole country. The main reason to this can be found in the non-use values of conservation.

When decisions concerning nature conservation are supported by economic analyses, all benefits and costs should be compared. The recent development of valuation methods in environmental economics has made the inclusion of environmental goods to cost-benefit analysis possible. A cost-benefit analysis of nature conservation should preferably be carried out at both national and local levels. Issues concerning cost-benefit analysis of nature conservation, especially at local level, are discussed in this article.

2. COST-BENEFIT ANALYSIS

2.1 The basic idea of cost-benefit analysis

Cost-benefit analysis (CBA) is applied to welfare economics. The principle in CBA is the aim of finding the resource allocation that maximises social welfare. CBA has been defined as follows: "CBA is an economic appraisal of the costs and benefits of alternative courses of action, whether those costs and benefits are marketed or not, to whomsoever they accrue, both in present and future time, the costs and benefits being measured as far as possible in a common unit of value." (Price 1989).

Cost-benefit analysis is a commonly used method of assessing the profitability of projects and a common aid to decision-making. It is in principle similar to private business profitability calculations, but has traditionally been used to aid decision-making in governmental actions and projects (Niskanen 1998, Johansson 1991). CBA has been used as an aid to decision-making e.g. in transport planning (e.g. Glaister

1994), mining in conservation areas (Imber et al. 1991) and reforestation projects (e.g. Niskanen 1998). According to Layard and Glaister (1994), there is no problem, public or personal, to which the broad ideas of cost-benefit analysis could not be applied.

The following classification of cost-benefit analyses is often recognised: financial, economic and social CBAs (Price 1997). While financial cost-benefit analysis examines only cash flows, economic CBA corrects distorted prices and includes non-market costs and benefits. Social cost-benefit analysis concentrates on distribution issues. Alternatively CBA can also be classified to financial, economic, social and environmental economic CBAs. In this case environmental economic CBA is considered as an extension to economic CBA. This extension includes economic valuation of environmental services (Niskanen 1998).

2.2 Costs and benefits in cost-benefit analysis

The basic rule in CBA is that an action or project is judged worthwhile if its benefits exceed its costs, where benefits and costs are defined to include any welfare gain or loss which occurs because of the project (Pearce 1983). The costs can be seen as a minimum amount that society is willing to accept as a compensation for not using the resource elsewhere in the economy (opportunity costs) or as a maximum willingness to pay in order to avoid changes in the use of the resource. The benefits of the project are measured by society's willingness to pay for change or to accept a compensation for losing the change (e.g. Johansson 1993, Niskanen 1998). When considering forest conservation, a project is socially profitable if the discounted sum of the profit from harvesting the current and all future rotations is less than the total willingness to pay for conservation or the willingness to accept compensation for the loss of conservation values.

Market-priced goods are often most easily observed and therefore included in cost-benefit analysis. However, the lack of market price does not mean that goods have no value. People might be willing to pay for the existence of the goods. Excluding non-marketed benefits in decision-making would lead to a loss in the welfare of the society. Even if market price does exist, it does not necessarily reflect the true social value of the item. This is mainly because of market failures. For example imperfect competition, restrictions in free trade and externalities in production may lead to a social marginal cost deviating from the social marginal benefit. This in turn may lead to misallocation of resources (Niskanen 1998). Therefore, if the objective is to allocate resources in the most effective way for society, shadow prices must be used.

3. THE COSTS OF NATURE CONSERVATION

When considering forestry, the opportunity cost of conservation is the net present value of lost wood production. If, instead of strict protection, some actions are allowed, the opportunity cost is the decreased net present value of wood production (Johansson and Löfgren 1985). For conservation of mires the alternative land use can in some cases be

peat production. The opportunity cost for conservation would consequently be the net present value of peat production.

In addition to lost forest incomes, forest or mire conservation causes loss of jobs and wage earnings. As a consequence of the reduced demand in production and consumption, nature conservation also has indirect and induced effects. Whether or not the effects of nature conservation on employment and earnings should be included in cost-benefit analysis depends on the existence of unemployment. If there is full employment, workers to a new job have to be taken from elsewhere in the system. In this kind of cases the opportunity cost of labour is the income in the displaced job (Pearce 1994). If there is unemployment, the shadow price of labour is lower. In “negative projects“ like forest conservation, if unemployment already exists, the increased unemployment has to be considered as a cost of conservation. The cost is the lost income minus the value of increased leisure time (Ovaskainen et al. 1996).

The extent of indirect and induced effects varies depending on the characteristics of the economy. As direct effects are most important in small and open local economies, indirect and induced effects are significant at regional and national levels. Multiplier effects are not included in economic efficiency analyses like cost-benefit analysis. However, estimating the size of the multiplier effects at local level may be difficult in economic impact analysis also. As recent discussion on the impacts of old-growth forest conservation in northern and eastern Finland has shown, multiplier effects are easy to define neither at regional nor at national level (Jaakko Pöyry 1996, Niskanen and Ollikainen 1996).

4. THE BENEFITS OF NATURE CONSERVATION

Nature conservation includes both use values and non-use values. Benefits included in nature conservation are mainly non-use values like existence and bequest values (e.g. Hoen and Winther 1993, Kriström 1990, Lockwood et al. 1993). Existence value refers to the valuations of environmental assets unrelated to the current or optional use. Bequest value refers to the altruistic motive of conserving the environmental resource for future generations. Use values of nature conservation relate to recreational possibilities and functional benefits like biodiversity.

The benefits of nature conservation are mainly non-marketed goods. The methods commonly used for economic valuation of non-marketed goods are contingent valuation method, travel cost method and hedonic pricing. Because values related to nature conservation are mainly non-use values, contingent valuation is the most often applied method for economic valuation.

The basic idea of contingent valuation method is to create hypothetical markets for environmental goods and to ask people how much they would be willing to pay for obtaining a particular environmental good or for preventing the loss of the good. In addition to this, they can be asked how large minimum payment would be needed to compensate the decrease of environmental quality. Contingent valuation method has been used in several studies concerning people’s values connected to present or planned

conservation areas (e.g. Pouta et al. 1998, Shyamsundar and Kramer 1996, Lockwood et al. 1993, Loomis et al. 1993, Imber et al. 1991, Kriström 1990).

Nature conservation may also cause real, observable money flows. The losses nature conservation causes to forestry can to some extent be compensated by developing nature-based tourism in the conserved areas. This, however, requires of the area both special characteristics and favourable location. In the province of North Karelia, Finland this kind of conservation areas are e.g. Koli National Park and Ruunaa Recreation Park. In both cases the special characteristics of the area have made new-fashioned entrepreneurship possible.

5. THE LOCAL COSTS AND BENEFITS OF CONSERVATION

The costs of nature conservation in the local economy vary greatly depending on the extent of conservation, the characteristics of the preserved areas, the way of conservation implementation and the structure of the local economies.

In the cost-benefit framework, lost stumpage incomes and other lost earnings can be regarded as costs of forest conservation. However, as conservation areas are often established on state owned land, lost stumpage income is not always wholly a cost for the local economy. If, instead of being conserved, these areas were being used by forestry, only a minor part of stumpage income would stay in the local economy. Because of that the opportunity costs of conservation of a certain area are lower at local than at national level. However, if forests, which are owned by local private people, are conserved, lost stumpage incomes are as a whole cost to the local economy. From the local economy's point of view the most important costs caused by nature conservation are lost labour incomes. Conservation areas are often situated in regions with high unemployment rate. If losses are not compensated, the establishment of new conservation areas makes the situation even worse.

In general multiplier effects of forestry are small even at national level. For example, production multiplier for forestry in Finland is estimated to be 1.10 (Ruotsalainen 1989). As local economies are small and open, the local multiplier effects of forestry are often insignificant. However, the importance of the multiplier effects is highly dependent on the local economy's structure and dependency on forestry. If there is no wood-processing industry, multiplier effects are minor and depend mainly on changes in consumption. If wood-processing industry exists, the effects of conservation depend on the availability of other resource sources. As old growth forest protection may cause severe consequences in regions with timber shortage, its effects on production may in other circumstances be only marginal.

The willingness to pay for conservation benefits may be weaker at the local level than it is on the average (e.g. Lockwood et al. 1993, Rogers and Sinden 1994). From the local point of view conservation areas can be seen as lost possibilities to increase the local welfare and non-use values can not always be seen important in that context. However, even if the effects of conservation on local economy may in many cases be negative, it does not mean that there are no benefits to local people.

The benefits of conservation to local people differ from its benefits to other people. As existence and bequest values are most important to people who come from outside the region, use values naturally have more emphasis at local level. Also non-use values, like bequest value, may have different, more personal nuance. In areas of specific interest nature conservation may also provide marketed goods to local people, mainly in the form of nature based tourism.

6. CONCLUDING REMARKS

In principle it is possible to find the best alternative of nature conservation for the whole society by comparing the costs and benefits of different conservation alternatives and by choosing the alternative with the highest net benefits. One of the problems of this kind of approach can be found in the benefit estimation. The benefits of nature conservation are mainly non-marketed goods and their value estimates can never be as exact as real market prices. People are not used to give monetary values to environmental benefits and decision-makers are not used to utilise this kind of information. However, non-marketed goods are not the only problem; market prices do not always reflect the real social value of the good either.

Choosing the level for cost-benefit analysis and compensations is also problematic. The costs of conservation are mainly local, whereas its benefits spread more widely. The best choice at national level may be the worst at local level. This may be the case if those who will be better off will not pay compensation to those who are worse off. In comparison, if decisions could be made locally, the solution would not probably be optimal for the society as a whole.

Nature conservation is continuously under discussion. It is generally agreed that conservation is needed, but how large areas should be protected, where should these areas be located and how much compensation should be paid to those who suffer from conservation. These are the crucial questions, which are continually met when planning and implementing nature conservation programs. Cost-benefit analysis is one of the major means to aid decision-making.

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FORESTRY SECTORS CONTRIBUTION TO INCOME AND RURAL DEVELOPMENT IN IRELAND

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ABSTRACT

EU Agricultural and Environmental policies seek to introduce forestry as a source of additional income, an alternative innovative agricultural industry and a valuable means of employment. In Ireland more trees are being planted now than ever before, and in effect, Irelands current rate of afforestation is the highest in Europe. This paper will examine the forest sectors contribution to income and rural development in Ireland.

Keywords: afforestation, rural development, Ireland

1. INTRODUCTION

The problems of implementing effective rejuvenation policies in rural areas have received a renewed impetus in recent years. However, the proposed solutions and approaches advocated for the resolution of this situation are as unique and complex as the areas in which they are situated. Output restrictions in agricultural produce, and the subsequent fall in farm incomes, together with increasing Community surpluses, have encouraged farmers to seek alternative ways to supplement their incomes. The EU is producing only twenty five percent of its timber requirements, and with farmers inadvertently affected by the need to find suitable and innovative means to achieving lasting economic viability, an investment in forestry offers a way of using land more productively and profitably.

2. FORESTRY IN IRELAND

Forestry is a viable agricultural alternative and one that is receiving growing interest in the rural economies of Ireland. However, 'Farmer Forestry' is a relatively new concept which was introduced in Ireland in the early 1980s (EC Regulation 1820/80), in response to the reform of the Structural Funds via the 89-93 Forestry Programme. Only nine percent of the total land area in Ireland is under forest. In comparison to the EU average, which is currently thirty percent, there can be no doubt that there is both scope and potential for further development and investment opportunities within this sector.

The Department of Agriculture, Food and Forestry is the overall body responsible for forestry development in Ireland. The legislative framework for forestry is set out in the Forestry Acts 1948-1988. The management of public forests is the responsibility of the State company 'Coillte Teoranta' since 1989. Until the 1950s, the majority of new planting was carried out by the State and was focused mainly in the Eastern part of the country. In 1950 the government afforested ten thousand hectares of marginal agricultural land per year in the West of Ireland (Mather 1993). This shift in location was the result of the recognition of the suitability of the wet rushy land which was characteristic of upland areas in the Western parts of the country.

Afforestation by the private sector was very low until the end of the 1980s. However, with the improvement of grant aid, it has increased in recent years, with the result that it has now exceeded investment by the public sector. In 1995, eighty five percent of all Afforestation on privately owned lands was undertaken by farmers. This figure represents a gradual shift in attitude of Irish farmers towards a more positive view of forests as a crop source and a sustainable agricultural alternative.

Ireland has a very favourable growing environment for forestry. It is also relatively free from pests, diseases and the effects of air pollution. Over half of the productive forested areas are less than twenty-five years of age. The main tree planted in Ireland is Sitka Spruce, a species native to the northwest coast of America. The estimated growth rate for this crop, is over three times the EU average. In 1998, the percentage of broadleaves planted represented sixteen percent, in comparison with Conifers, which represented eighty four percent. It is envisioned that in the near future, the percentage of Sitka Spruce planted in Ireland will be reduced to sixty percent of the National average and that each Afforestation programme will include a minimum of two species.

3. RURAL IRELAND

The Irish Census definition of 'rural' is places with 1,500 inhabitants or areas of open countryside. Ireland is predominantly rural with an estimated forty eight percent of its inhabitants living in rural areas. In these rural areas, agriculture represents an important industry and a way of life for those dependent on the primary sector.

Ireland is divided up into eight Regional Authorities, which were formally established in 1994. Despite the relatively small size, there are considerable intra-regional and inter-regional imbalances within the country. This paper will focus on three selected counties, two of which are situated in the Western Region of Ireland (Mayo and

Table 1. Tree planting in the counties of Leitrim, Mayo and Roscommon bu 1998 (ha). (Source: Irish Forestry Services, 1998.)

County	Total	Private	State	Area	% Planted
Leitrim	20 263.53	7 542.29	12 721.24	152 476	13.28
Mayo	47 293.36	14 465.85	32 827.51	539 846	8.76
Roscommon	17 042.99	7 818.01	9 224.98	246 276	6.92

Roscommon) and the remaining one in the Border Region (Leitrim). These counties have been selected because they share common characteristics, which include peripherality, low population density, high dependency on the primary sector, insufficient infrastructure, lack of market accessibility, high levels of out-migration and a tendency for lower fertility rates.

Analysis of the Labour Force Statistics for 1996 indicates that the total percentage of people employed in the primary sector in all three counties is over twenty percent¹. This figure represents over twice the national average. The average size of farm holdings is twenty-two hectares, the majority of which is subsistence type farms, which are heavily dependent on grazing livestock. Population density is less than twenty persons per square kilometre; therefore, there is no great pressure on land. In terms of Regional GVA levels, they represent the lowest levels in Ireland.

A Teagasc National farm survey in 1992 estimated that two thirds of Irish farms are not economically viable. These farms are situated mainly in the Western region of Ireland. They are characterised by heavy wet mineral/gley soils and inter-drumlin peats, which are particularly suitable for forestry. This land is unsuitable for agriculture, and it is capable of producing high yield Spruce crops. However, efforts to increase the area of land devoted to forestry in these areas has been very slow despite reductions in farm support. Afforestation is hindered by the structure of the farms, which are commonly fragmented. More importantly, these farmers have no tradition of forestry, and do not view trees as a valuable crop for planting. Many farmers are over the age of fifty-five years² and are therefore more reluctant to accept innovative agricultural projects, particularly on their 'valued' land. Table One shows the percentage of land, which has been planted in 1998.

Whilst it is difficult to quantify the benefits from forestry, it has been estimated that with subsidies, the returns from forestry are close to those from cattle and sheep for part time farmers. The farmers are further enticed to plant by the provision of generous Afforestation grants, which cover the total cost of establishing a plantation. Additionally farmers are entitled to a maintenance grant, payable four years after plantation and more importantly an Annual Forest Premium for up to 20 years³. A typical farmer in the West of Ireland may expect to earn an annual income of £210 per hectare of land planted. However, the precise rates of afforestation grants are determined by the type of land and species planted. In this area, the majority of land that has been afforested is marginal

¹ In 1996 16 000 people were employed both directly and indirectly in forestry in Ireland.

² Only 13% of Irish farmers are under the age of 25 years with the 55+ age group being the most dominant age category (Irish Agricultural Census, 1991).

³ The level of premium paid to farmers is higher than that paid to non-farmers.

land (which has proven to be unsuitable for agricultural purpose) and Sitka Spruce is the main species planted. Despite the significant economic gains to be made from forestry, there is still a reluctance from farmers in the more rural areas of Ireland to plant.

A small-scale study carried out in Brackloon D.E.D⁴ representing a survey of one hundred local farmers estimated that only thirteen percent of farmers had land planted. Sixty two percent reported that they were unlikely to plant. Seventy percent reported that they would favour the planting of trees on marginal land, and more significantly eighty four percent reported that they would not favour the planting of trees on productive land (Sheridan 1998).

This is a valuable 'localised' survey, which adequately represents the voice of the farmer in rural Ireland today.

Results from a survey completed in 1994 (Thompson and Psaltopoulos 1994⁵) estimated that the regional socio-economic benefits of afforestation in rural areas appear greatest in the West of Ireland. Increasing the output of forestry in Western Ireland would lead to a significant increase in total regional output and income. Furthermore, there is a high indirect and overall economic effect in the timber processing industry, together with a high direct employment effect (attributed to the low-paid jobs). In addition, the direct employment effort in wood products and furniture sector are high. Therefore, an increasing investment in forestry produces very positive economic gains for the rural areas in Ireland.

The Irish Strategic Plan for Forestry Development aims "to develop forestry to a scale and a manner which maximises its contribution to national economic and social well-being on a sustainable basis and which is compatible with the protection of the environment." To achieve this aim, further planting of high yielding species on good quality land is required. Therefore, the reluctance of farmers to give up good quality land will slow this process. Additionally, a number of conflicting Government/EU supported farming programmes such as REPS, are a competing attraction to farmers. They do not require the 'handing over' of the land to forestry, or income loss in the years between planting and generation of revenue from thinning and harvesting takes place.

4. THE CO-OPERATIVE APPROACH: A WAY FORWARD FOR AFFORESTATION

The 'subsidiarity principle' advocates the process of decision making to be made to the closest level possible to those whom are affected by it. The small farmers in the West of Ireland have a long tradition of belonging to farmer owned producer co-operatives. This tradition of co-operative involvement has been used as a means to overcoming a few of the many barriers, which prevent the conversion of non-viable land into forestry. One example of such a co-operative is the *Western Forestry Co-operative Society Ltd.*, established to 'improve farm incomes, create locally based employment and allow a structured and planned approach to farm forestry development'.

⁴ Brackloon D.E.D is situated in East Mayo.

⁵ The survey compared three regions: Scotland, Northern Ireland and the West of Ireland.

Initially the co-operative sought to overcome the negative perceptions of forestry by highlighting its merits. Success is achieved by offering advice, guidance and management services to the farmers at a local level. The co-operatives are thus 'Farmer Owned, and Farmer controlled for Farmer benefit'. Over the past twenty years the success of the Co-operatives have been highlighted by the emergence of twenty Farmer Forestry Co-operatives located in the Irish Republic and three in Ulster. They work in close co-operation with local development groups, tourist bodies, fishery bodies, historic and archaeological sites and environmental groups. The co-operatives realise the integrated and multi-sectoral nature of local development, and therefore seek to liaise with relevant bodies when planting.

The philosophical rationale for these Co-operates is that forestry should benefit the local community in addition to the farmer. The farmer is encouraged to view his/her land as part of the local landscape. Each co-operative is assigned a forester/development officer who is available to the potential planter at all times. What characterises their success is their value placed on the small areas of land that a farmer has decided to plant. The spin-off effects from this are in the long term very positive as one farmer living in a small community may encourage by 'word of mouth' other farmers in the area to plant. Because of the myriad of farms in these rural areas, it is hoped that a small collection of farms will join to plant a large unit of land.

5. CONCLUSION

Rural areas in Ireland, are experiencing many problems which include, peripherality, low population density, high dependency on the primary sector, insufficient infrastructure, lack of market accessibility, and high levels of out-migration. There is a need to rejuvenate rural areas by making them more attractive places for the tourist, the entrepreneur, the farmer and the young. The creation of valuable employment, from indigenous forest related micro-enterprise, should help in the struggle to reverse the trend of out-migration, that is threatening to discourage young people to live in rural areas.

The Irish Government aims to increase the area under forest in Ireland from nine percent to seventeen percent by 2030, and to reach an annual planting rate of twenty five thousand hectares by the year 2000. In order to achieve this aim, one should not devalue the merits of the more localised and 'bottom-up' approach to farmer forestry particularly in rural Ireland. The Co-operative approach to afforestation, represents a valued support structure for the farmer at a local level. It puts the farmer in control of his/her land, and encourages positive spin-off effects by encouraging other farmers within these small communities to realise the benefits to be gained from the conversion of non-viable agricultural land into forestry.

Forestry represents a sustainable use of agricultural land, an aesthetically pleasing use of land, a valuable additional source of income, and an environmentally friendly natural resource. An increasing investment in the forestry sector is welcomed in all regions of the EU, and 'touch wood' it will continue to contribute significantly to rural development in Ireland.

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THE CONNECTION BETWEEN FOREST RESOURCES AND THE MAINTENANCE OF RURAL POPULATIONS IN NORWAY

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ABSTRACT

Forest resources make a limited contribution to the maintenance of rural populations in Norway. From a theoretical a direct connection is shown between the economic development and settlement pattern in Norway. On the basis of the structural changes within the primary, secondary and tertiary sectors, this paper presents some ideas on how forest resources can be better used for creating employment in rural areas. This includes shifting the focus of economic development planning from the resource base to the creation of employment opportunities better suited to the demands of new generations.

Keywords: forest resources, economic development, rural populations

1. INTRODUCTION

In Norway there is political resolution – and desire – to maintain rural populations in all parts of the country. The last official policy document (St.mld nr.31 1996-97) related to regional economics states that the aim of rural- and regional policy is to maintain rural populations and develop robust regions in all parts of Norway.

To achieve this goal, several strategies have been used within the National economic policy (Amdam et al. 1995). Prior to the 1980s, Norway had a top-down strategy, which indicated a strong national control of the economic policy on local level. During the 1980s, a more bottom-up oriented strategy was introduced, allowing the local communities to make their own decisions regarding the economic policy.

2. FOREST RESEARCH CONNECTED TO RURAL ECONOMIC DEVELOPMENT

2.1 Structural changes in economic development

Historically forest research has concentrated on biological/silvicultural and technical questions. Over the last twenty years, environmental questions have also received considerable attention.

A study of relevant literature on forest resources and rural development has been done in Norway (Vennesland and Solberg 1998). The study underlines the need for using knowledge from forest research within the context of rural economic development based on forest resources. It seems like forest researchers and rural development researchers live in different worlds. With regard to the political instruments in the regional economic policy it would be beneficial to bring these two bodies of knowledge together.

Research related to primary and industrial production has until recently been important in the economic development of both urban and rural areas. Until 1960, half of the Norwegian workers had their jobs in either agricultural/forestry/fishery- or the industrial sector. However, there have been great structural changes over the last twenty years in the employment between the primary, secondary and tertiary/service sector. Most of the new jobs created are related to the service sector.

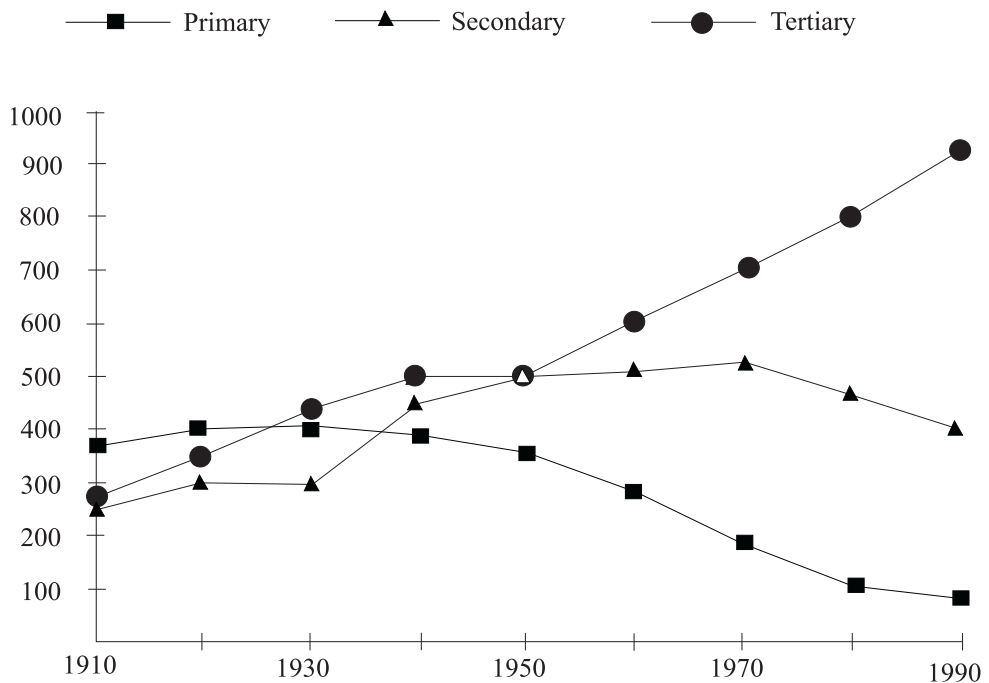


Figure 1. Structural changes in employment in Norway from 1910 to 1990.

2.2 Theories explaining structural changes

There are several theories which explain the structural changes indicated in Figure 1. They include the Clark-Fourastiè model (Hodne and Grytten 1992), the Rural-Urban Theory (Aanesland 1987) and the Evolution model (Skonhoft 1997). All of these theories are based on the idea, that economic growth together with the technological development move labor requirement from the primary sector over to the secondary sector and from there on to in the service sector. Since the primary sector is mostly connected to rural areas and natural resources, the population will move from rural to urban areas.

Location theory (von. Thünen 1826) dictates that it is profitable to locate most production activities in areas of high population density. This is especially true for the service sector. When population density is increasing, the demand for dentists, schools, doctors, shops, etc. is also increasing. When employment in the primary sector is decreasing, but is increasing in the service sector, we will experience that people are moving from rural areas into cities and urban areas.

3. NATURAL RESOURCES AND RURAL DEVELOPMENT

3.1 Natural resources connected to settlement pattern

Theories mentioned above show the direct connection between economic development and settlement patterns. In regard to this traditional understanding of economic development based on forest resources, it can be illustrated that natural resources are used in the production of goods that are sold in a market. The production creates jobs, and the workers who want these jobs must live in a reasonable distance from the place of production. Figure 2 illustrates the connection between the natural resources and the settlement pattern in an economic perspective.

Until now most of the theories of economic development based on forest related resources have been focusing on the resources, and the production of goods which are to be sold in a market. What kind of jobs this production offers to the local population is seldom discussed. The focus has been on the production and marketing of the products.

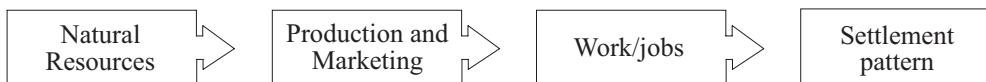


Figure 2. The connection between natural resources and settlement pattern in an economic perspective.

3.1 New questions that have to be solved

Related to the national aim of maintaining the rural population in Norway, the above model can be re-examined by starting with the development of settlement pattern. The following questions can then be asked:

What kind of jobs are needed in rural areas to maintain the population?. In Norway the education level among young people is increasing, and it is logical to presume that most of them want a job where they can use their education. If attractive jobs are wanted to be created, forest based production must take this into consideration. The jobs created must offer challenges for the professional knowledge of job seekers.

What kind of products and production forms can provide these jobs?. The literature review on forest resources and rural development (Vennesland and Solberg 1998) shows that Norwegian economic development planning has mostly been focusing on the utilization of the forest resources in the industrial production. The production forms in the future have to offer other jobs than just serving an assembly line.

What kind of future demands can be settled through rural jobs?. The urbanization trend in Norway has never been stronger than in the 1990s. Taking this into consideration the rural jobs based on forest resources must serve an urbanized population more directly in the future. It seems like the demand of forest products in Norway has to move from a production orientation to be more service oriented. We see from urbanized countries in Europe that forest resources contribute in a service oriented direction regarding job creation in the countryside (Koch and Rasmussen 1998).

4. CONCLUSIONS

The basic problem in forestry and rural development science is *to find how forest related resources can better contribute to creating those types of employment that people in rural areas prefer related to future demand.* The problems/questions above must be solved by combining the natural science of forest resources and production based on these resources with social science of structural changes in society and human resources.

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AFFORESTATION PROJECTS AND RURAL DEVELOPMENT IN ICELAND

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ABSTRACT

Trends in rural development in Iceland are considered a major problem, with rural areas suffering from decline in traditional agriculture and the changes in fisheries. At the same time, politicians try to find solutions from a number of possibilities, including forestry. Is it possible to maintain and strengthen rural development with afforestation projects in Iceland? This question will be addressed in this paper by describing Icelandic forestry, and by looking at the ongoing research analyzing the effects of an afforestation project in a chosen rural area in east Iceland.

Keywords: rural development, afforestation project, job priority

1. FORESTRY IN ICELAND

Forestry in Iceland differs considerably from that in the other Nordic countries. The forest area in Iceland is very low compared to Denmark, Finland, Norway and Sweden and dominated by a single tree species; downy birch (*Betula pubescens* Ehrh.). It is estimated that 85.8% of the birch woodland is less than 5 meters in height, and 14.2% is above 5 meters and up to a maximum of 12 to 13 meters. Natural and man-made woodland covers 1.33% of the land area (Snorrason 1995), with natural birch woodland covering 117 367 ha and plantations assumed to cover 15-20 000 ha. Until the 1970s, most of these plantations were established within existing birch woodland, but that practice is not used anymore. Nowadays approx. 1500 ha are planted annually in Iceland.

Figure 1 shows how the situation in Iceland is extreme in comparison to other European countries, but the lack of forest is not the only factor that makes Iceland unique. Iceland is an island with land area of 103 000 km². Soil degradation and desertification have devastated large areas since the settlement of the island some 1100

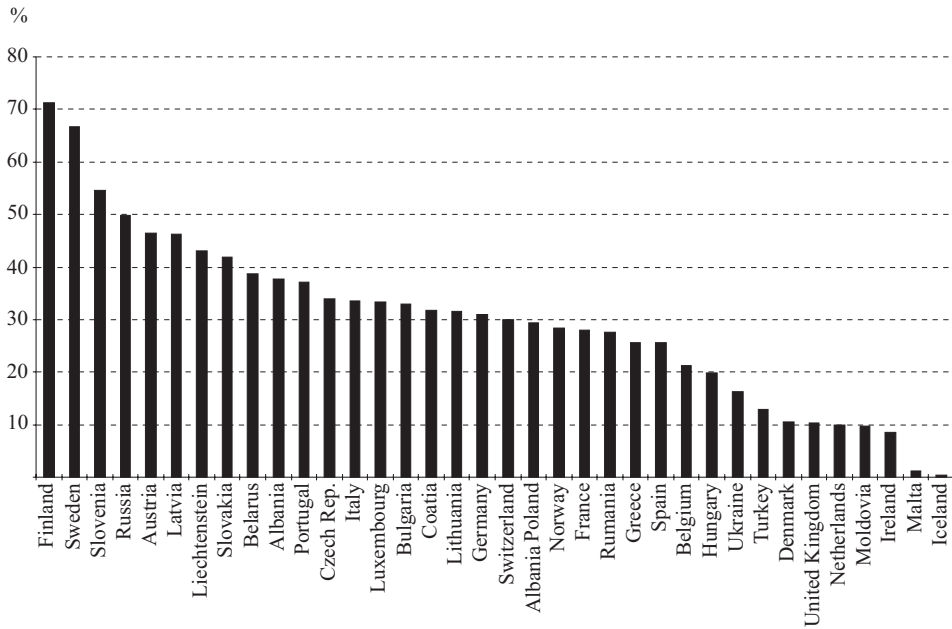


Figure 1. Forest cover in 36 European countries (%). Source: Rep. 3rd Ministerial Conference on the Protection of Forest in Europe, Lisbon, June 1998.

years ago. Satellite images show that more than 37 000 km² of the country are barren and an additional 10-15 000 km² are heavily eroded with only limited plant cover (Arnalds 1997:47).

It is estimated that approx. 25-30% of the island was forested at the time of the settlement, which was about half of the estimated vegetation cover at that time (i.e. 60%). Today, only 25% of the country is covered with vegetation. In view of this situation, the protection of woodlands has been the major objective of forestry since the beginning of the century. Forestry and soil conservation laws were passed simultaneously in 1907, which resulted in the creation the Iceland Forest Service (IFS).

2. AFFORESTATION

During the period from 1950 to 1988, between 0.5 and 1.5 million tree seedlings were planted annually. In 1989, the rate of planting increased to 2 million and reached 4 million in 1990. Since then some 4 to 5 million seedlings have been planted annually (Snorrason 1997, Figure 2). This increase is partly due to new state supported afforestation projects with the co-operation of farmers and other landowners, and to the increased activity by municipalities and forestry societies around the country. The aims of this increased afforestation are to establish of production forests and to reclaim eroded land and create amenity forests. State supported farm afforestation, with state grants of 80-97%, accounts for about half of the annual planting in Iceland and an additional 1.5 million trees are planted with the aid of smaller grants (Eysteinnsson 1998:2).

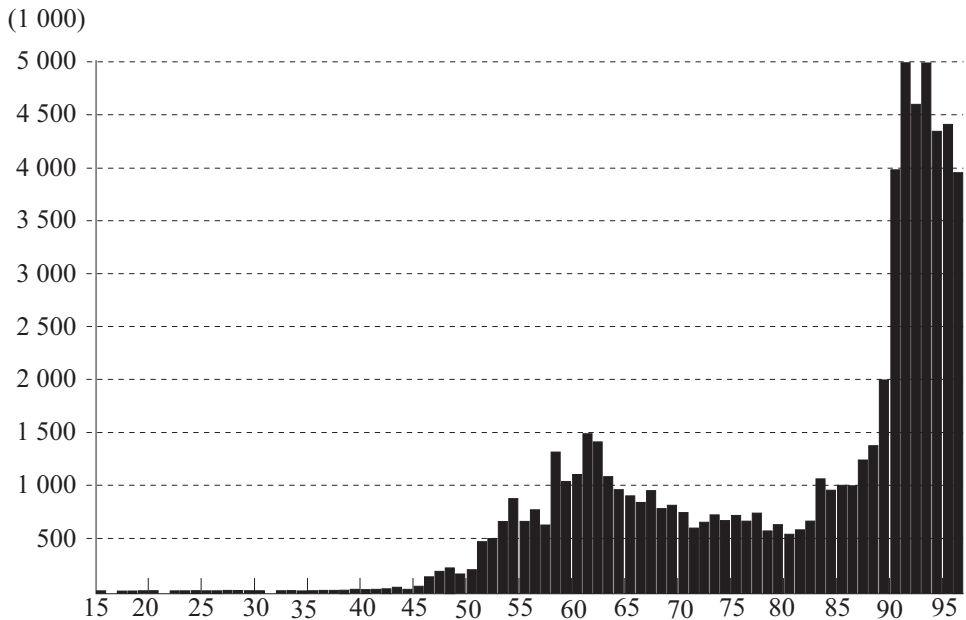


Figure 2. Produced plants 1915-1996.

Many factors in the Icelandic environment are likely to encourage people to grow forests. As mentioned earlier, the land is windy and soil erosion is a big problem. With regard to the incentive structure of Icelandic forestry, the State finances all major afforestation activities. Subsidies are launched through the Icelandic Forest Service and the *Héraðsskógar* and *Suðurlandsskógar* projects, and other smaller farm forestry projects in the north and west. The Soil Conservation Service (SCS) also plants a considerable amount of trees in their effort to reclaim eroded land. State grants are at 4 levels:

- 97% Grants for farmers participating in the *Héraðsskógar* and *Suðurlandsskógar* afforestation projects, covering establishment costs including precommercial thinning.
- 80% Grants for farmers outside the big afforestation projects areas, covering establishment costs, excluding fencing, roadbuilding and thinning.
- 50% Grants in the form of tree seedlings, covering about half of the establishment costs. Applies for forestry societies and individuals with the aim to afforest land, land reclamation, soil conservation and to provide shelter.
- 25% Grants where, one seedling is granted for each seedling bought by an individual, available to those who do not fit into the above categories.

3. FOREST OWNERSHIP STRUCTURE

Roughly 70% of forests and woodlands in Iceland are privately owned, the State owns 24%, and 6% are owned by local municipalities and districts. The IFS manages roughly 5% of the total forest and woodland area in Iceland and another 11% of woodland is located within national parks and other reserves administered by the Nature Conservation Agency.

The average size of forest holdings is not known. However, the size of farm afforestation areas receiving subsidies ranges from 10 to several hundred hectares, averaging around 50 ha (Eysteinnsson 1998:3). Recently forest owner associations have been established in all parts of Iceland, and in 1997 they formed the National forest owner association with 450 members. Forest owners are forming a framework for their interests and are trying to gain full recognition within the agricultural establishment.

Figure 3 shows the institutional structure of the forest sector. The IFS is under the ministry of agriculture. It is worth remarking that no county level bodies are active in this process. The forest owner has a strong linkage to the IFS since farm forestry is subsidised by the State.

4. FORESTRY AND RURAL DEVELOPMENT

4.1. Urban vs rural interface

Since the end of the World War II, Icelandic society has changed dramatically. It was a poor society that mainly relied on primitive agriculture and fisheries but is now listed among those nations that enjoy the most prosperity in the world, developing high tech industries, fisheries and services.

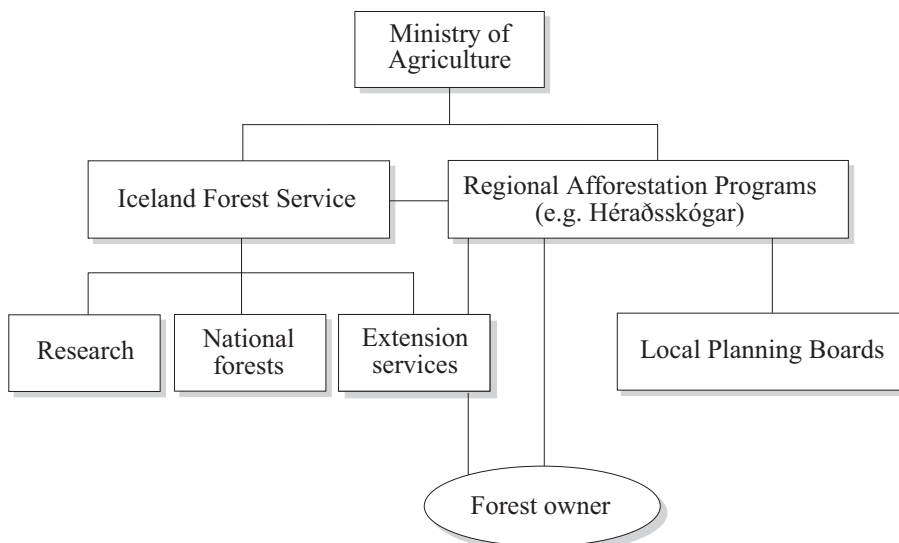


Figure 3. Administrative structure of the forestry sector in Iceland.

During this process the Reykjavík metropolitan area has grown and is now the home to 70% of the Icelandic population. Meanwhile, small villages and rural areas around the country suffer. For example, sheep quotas have declined by 45% since 1978, and fishing villages suffer from changes in the fishing quota system, which now allows quotas to be sold between companies and towns. This rural development is regarded as a serious problem on the political level and a lot of effort is put into solving it. One example of such an effort is presented below.

The population in Iceland is 275 000 and the unemployment rate only 2.2%. These numbers and the fact that only 1.33% of the island is covered with woodland show that Iceland is a micro state where forestry is not economically important. How can forestry have any impact on rural development?

The answer is twofold. On the one hand, the activities of the Icelandic Forest Service create jobs in 10 different locations in rural areas around the island, in stations, nurseries and at the main office. On the other hand, afforestation projects in co-operation with farmers and other landowners create jobs on those farmsteads taking part in the projects. These afforestation projects *Héraðsskógar* and *Suðurlandskógar*, discussed above are the ones through which farmers can receive a 97% state grant.

4.2 Afforestation schemes

Héraðsskógar afforestation project is located in East Iceland in an area called *Fljótsdalshérað*, which is a large inland valley little affected by oceanic climate. Mountains of up to 1240 m high surround this valley and the river *Lagarfljót* divides *Fljótsdalshérað* into two. Regarding the problem of soil erosion, this area is classified to be in good condition (Arnalds et al. 1997). The population of East Iceland is just above 11 000 and it is dispersed into many small villages and farmsteads. Most of the villages are in the fjords on the coast, but two of them are located in the afforestation project area, *Egilsstaðir* and *Fellabær*.

The *Héraðsskógar* project has its foundation in the *Héraðsskógar* Act from 1991, which has the object of encouraging afforestation in *Fljótsdalshérað* district, in an effort to ensure that the district remains populated and to stimulate local economic activity (Gunnarsson 1995:2). The project is the continuance of a pilot project *Fljótsdalsáætlun*, which began in 1970. The pilot project involved a co-operation between the IFS and 15 farmers in *Fljótsdalur*. It was on a small scale compared to *Héraðsskógar*. The idea of farm forestry in Iceland can, among other things, be traced back to the so-called *Örsta* plan in the Norwegian district of *Sunnmøre* in the 1950s.

According to the *Héraðsskógar* Act, the afforestation project has a 40-year lifetime, i.e. from 1990 to 2030. Each contract with a forest owner has a duration of 10 years. The goal is to plant up to 15 000 ha during this 40-year period. Contracts have already been made for 10 000 ha of land, and by the turn of the century, 5000 ha will have been planted. According to the contract, the forest owner is required to pay a 3-5% fee of the gross value of the timber removed into a regeneration fund, which is kept in trust by *Héraðsskógar*. The money in the fund will be regulated according to the costs of replanting at the time of thinning or felling. All contracted forest owners will also pay 30% of the net profits from sales of forest products into the public exchequer and that

money will be used to finance new plantations. The first thinning will be exempt from this duty (Gunnarsson 1995:43).

It is a priority that employment emanating from the project stays with the local economy. Occupants of those farms where land is reserved for afforestation according to a contract with *Héraðsskógar* have priority rights to jobs on their land connected to the project. Job priority for other work undertaken by *Héraðsskógar* is granted to farmers who cease sheep farming in order to join the project. After these farmers, other farmer participants in the project have the priority for jobs connected with it.

Héraðsskógar has been active for 9 years and the number of contracted farmsteads is 83 of 120 potential farmsteads, of which 71 are privately owned, 8 are state owned and 4 belong to the Church. Contracted area ranges from 10 to 800 ha, averaging 119 ha, and the average age of the forest owner is 54 years. Ten of the participating farmsteads took part in the pilot project from 1970.

In 1997, the Icelandic parliament passed an afforestation Act *Suðurlandsskógar*. It is technically very similar to the *Héraðsskógar* Act in the east. This project will use the experience gained from *Héraðsskógar* and will probably strengthen rural development in the south.

A new Regional Forestry Projects Act allows the minister of agriculture to decide if identical projects will be started in other parts of the country without passing a special Act. Preparation is now under way to establish such afforestation projects in north and west Iceland.

5.3 *Héraðsskógar* afforestation project

Héraðsskógar was chosen as a case study in a Nordic project called “Public participation as a means to sustainable forest management”. The core of this project is based on case studies of public participation in each country. The project aims at providing empirical evidence of the link between the legal, organisational and cultural premises and the applicability of public participation.

Interview surveys have been done in the case study area, both among farmers in the afforestation project and among people on the management level. The survey aimed at measuring the attitudes and beliefs towards public participation in forest management among other things. The interviews gave a perfect opportunity to ask people about the afforestation project in relation to rural development, i.e. to try to find out if the main goals of the project were functioning.

Farmers were, for example, asked what long-term affects the afforestation project would have on rural development in the area. Answers were all positive. They were very optimistic about the positive affects, such as that it would provide more jobs in the future, land would become more valuable, farmsteads without sheep or milk quotas are inhabited, it would give shelter and make other agricultural activities easier. Some farmers were even afraid the project would provide more jobs than would be possible to handle in the future.

Farmers were then asked what effects they already see on rural development. Almost all answers were positive. They mentioned things like increased opportunities for young people, more job opportunities, farmsteads are inhabited although traditional agriculture

is not practiced any more, increased knowledge in the area, the project improves further the clean image that the area has, deserted farmsteads have been inhabited again, more people would have moved away if this project would not have been started.

The question if the value of farmsteads had increased since the project began gave promising results for those taking part in the project. 65% said yes, 22% said they did not know and 13% said it had not. Over 70% believed that wood production could become an industry on the long run future and the same percentage believed it would give appreciable income in the future.

6. FOREST MANAGEMENT AND PUBLIC PARTICIPATION

The definition of forestry and forest management and public participation in forest management must be adjusted for Icelandic conditions. Management of existing forests only applies to specific areas under the supervision of the IFS, e.g. the largest forest in Iceland, *Hallormsstaðarskógur* (located in the case study area). Afforestation management applies to planning because forestry on privately owned land is for the most part in the establishment phase. The supply of timber from the forests is very limited and the natural birch is not suitable for timber production. Therefore the utilisation of the forests does not have the same meaning as in the other Nordic countries. Public participation applies to the planning of afforestation programs in the context of forest management. In the future, the concept “forest management” in its usual sense will be most appropriate in the afforestation projects areas.

Forest management is under the influence of many actors, both governmental and non-governmental. The governmental branch mostly concerns the IFS as an institution, which influence a large part of Icelandic forestry. Other actors are important in the overall context of public participation in forest management. The interaction between actors from bottom up to the top generates in fact the atmosphere that shapes Icelandic forestry. This structure is rather informal, many actors have a common interest, i.e. to grow forests in this barren land and the linkages are strong between individuals and groups. An example is the yearly meeting of the forest owner association where many actors come together to shape the demands and influence the decision-making process. In such meetings there are the forest owners, representatives from the IFS, *Héraðsskógar* and *Suðurlandsskógar*, also from the ministry of agriculture, and from the Icelandic forestry association.

7. CONCLUSION

Preliminary results of the public participation study support the positive notion of the farmer’s answers. Population of municipalities in the project area is not decreasing as outside the project area. Other variables have not been considered at this stage. The project area will be likely to spread to other municipalities within the next few years and then it will be possible to see if the afforestation project supports the positive

development of the population. The farmers were asked about their future thoughts regarding the development of the traditional agriculture in the area and most of them felt hopeless and said they did not know what to think. This indicates that uncertainty is high. The development of the traditional agriculture is the biggest variable for future rural development, but the positive affects of the *Héraðsskógar* project should make the area more capable of withstanding crisis.

The opportunities for forestry-related rural development in Iceland are obvious and the experience of the *Héraðsskógar* project is very positive in this respect. Over 230 farmsteads now participate in afforestation projects in east and south Iceland and once such projects are set up in the north and west, 400-500 farmsteads will enjoy the same grants and hopefully the same positive qualities they stand for.

It is not enough to start afforestation projects and hope all goes well. Research, planning and other extension services are fundamental for success. Important areas of research are species, provenance and clonal trials; tree breeding and seed-production; forest ecology, silviculture and research on pests and diseases. Reassessment of forestry potentials in Iceland is under way and social research in forestry began with the Nordic co-operation in the SNS project, "Public participation as a means to sustainable forest management".

A lot of effort is being put in securing that forestry in Iceland can have a bright future. Experience, knowledge and technical means are available, the question is more politically oriented. The research presented here indicates that farm forestry could strengthen rural development and have long-term affects.

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THEORETICAL BACKGROUND OF INDICATORS AND INDICATOR SYSTEMS FOR THE ASSESSMENT OF SUSTAINABLE DEVELOPMENT

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ABSTRACT

Agenda 21 which was adopted as the final document at the UN Conference on Environment and Development (UNCED) in 1992 in Rio de Janeiro calls explicitly for the development of indicators of sustainable development (United Nations 1997). This paper describes the theoretical background of indicators by giving an overview of different definitions as well as the functions of indicators, their threshold-degrees and limiting values of indicators, differentiation characteristics and criteria of choice. Two types of aggregation are presented and critical aspects are discussed. Furthermore, the basics and requirements for indicators of sustainable development are presented. Examples from literature about the suitability, problems and limits of indicators are also introduced. The empirical analysis comprises expert interviews with members of the German and the Finnish Commission on Sustainable Development. Finally, preliminary results of the interviews are presented.

Keywords: sustainable development, indicators, indicator systems, Germany, Finland, Commission of Sustainable Development

1. THEORETICAL FRAMEWORK FOR INDICATORS

1.1 Change from economic indicators to indicators of sustainable development

The retrospective view on the different stages of the development of indicators is helpful in order to separate the indicators of sustainable development from the concepts for economic, social and environmental indicators which have already been developed. Indicators of sustainable development are, according to chapter 40.4 of Agenda 21, indicators which provide a solid basis for decision-making at all levels and contribute to a self-regulating sustainability of integrated environment and development systems (United Nations 1997: 284).

Economists have been dealing with indicators for the evaluation of the efficiency of a national economy since the 1920s. Examples are gross national product (GNP), unemployment rate and rate of inflation (Stobbe 1988: 398). The information content of the gross national product and other aggregated economic indices has been discussed controversially for several decades (Diefenbacher 1995; Van Dieren 1995: 79; WWF European Policy Office 1995:5; Fues 1998: 15), because these parameters cannot explain why certain trends occur in society nor they are able to show the situation of a certain industrial sector or of a special region. As a reaction of the poor content of the national accounting system, there have been several phases in the development of alternatives (Hodge 1997:6).

- a) since the 1950s: Alternative Economic parameters,
- b) since the 1960s: Social indicators (Leipert and Simonis 1982: 435; Nohlen and Nuscheler 1993: 76),
- c) since the 1960s: Indicators for the description of the quality of life (FAO 1993; Atkinson et al. 1997),
- d) since the 1970s: Indicators for the description of the state of the environment and natural resources (*Environmental Indicators*¹) (OECD 1993, 1994),
- e) since the 1990s: Indicators of sustainable development.

1.2 Definitions of indicators

One consequence of the information age is the rapid rise of available collected and saved data from various fields. This flood of data is the base for the decisions of politicians and other decision makers. Unfortunately, useful and demonstrative information can hardly ever be taken out of the general flood of data. In order not to drown in the data flood, it is common to select those data which possess a high information value. This selected data set is often called as indicators, like Ott (1978) defines:

”Ideally, an index or an indicator is a means devised to reduce a large quantity of data down to its simplest form, retaining essential meaning for the questions that are being asked of the data. In short, an index is designed to simplify. In the process of simplification, of course, some information is lost. Hopefully, if the index is designed properly, the lost information will not seriously distort the answer to the question”.

A distortion of the original data may be a high price for the extracted information out of the available amount of data. This is particularly true in the case of indicators of sustainable development, where the desired data base is often missing, and where surrogates must be used instead.

In the social-scientific discussion and also within the development of environmental indicators, there is a broad consensus about the definition of indicators, which can be named as an deductive approach, because it is derived from theoretical considerations

¹ Environmental indicators give information about the driving forces of environmental burdens, the state of the environment and its change

(Fues 1998: 21). The common sense of these concepts (McGranahan 1974: 208; Nohlen and Nuscheler 1974: 326; Addicks 1977: 34; Krupp and Zapf 1988: 124; Nohlen, 1991: 324; Nohlen and Nuscheler, 1993: 77) is reflected in the following definition of Nohlen (1991: 324) (translated by the author): An indicator is a variable, which mediates or shows quantitative or qualitative information about complex circumstances or problem areas. The indicator informs about observable and measurable clues for “certain circumstances or theoretical constructions which are considered to be unobservable.”

The indicator itself is only from subordinated interest (Fues 1998: 21). Its only importance is in the way it enables predications about an analytic object. For example, the forest surface in hectares may indicate the richness of forest land, but a single view on the size of the forest area does not have direct relevance for the evaluation of naturalness.

Behind this definition, orientated on socio-scientific theories, one can also find a more pragmatic, inductive approach as a result of the research about environmental indicators and indicators of sustainable development initiated by OECD and AGENDA 21 (Adriaanse 1995: 7; Hammond et al. 1995; SCOPE 1995: 20). The position of indicators within multilevel information systems can be clarified with the help of a data-pyramid.

Basic data are at the bottom of the pyramid with processed information, like statistical data above. Indicators are derived from there by aggregation or selection of certain aspects, which have been estimated as particularly relevant. On the top of the data-pyramid there are the weighted and aggregated indices.

As a summary it can be stated that indicators simplify basic data to make complex circumstances measurable, and to present the results to a broader public.

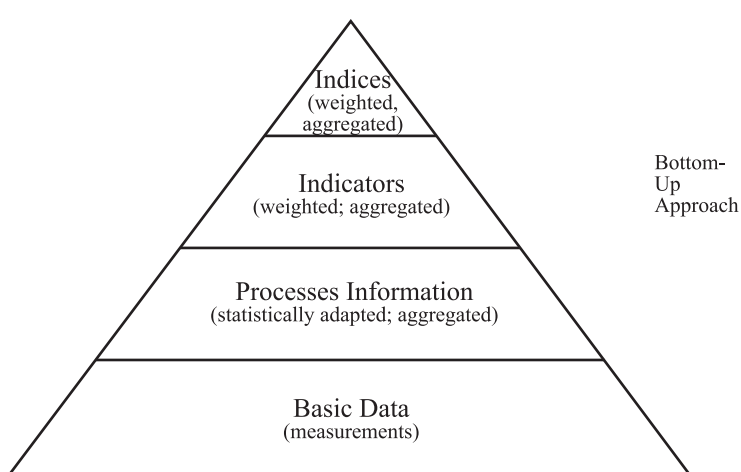


Figure 1. The Data-Pyramid. (Source: Adriaanse 1995: 5)

1.3 Functions of indicators

Indicators are needed for the following reasons (ICLEI 1999; Rennings 1994: 6; UK Department of the Environment 1996: 2):

- People are concerned about the sustainable development and the environment, while at the same time they are confused by the media when confronted with the unsubstantial term of "sustainable development". People need to be informed about the state of the environment and how and why it is changing so that they can readily understand and monitor government policies.
- Indicators can provide a means of linking environmental impacts to socio-economic activity, and may in some cases provide early warning of potential environmental problems arising from human activity.
- Indicators can help to demonstrate the efforts policymakers make towards sustainable development, and if the first objectives have been achieved.
- Indicators can help to clarify the confusion caused by the mass of statistical data available.

As a result, the following six main functions of indicators, which are essential for the application of indicators can be derived (Krupp and Zapf 1988: 122; Nohlen and Nuscheler 1993: 80; SRU 1994: 86)

Reporting is one of the main functions of indicators. This means the description and diagnosis of the present situation in the sense of an inventory control without assessing the data. There is no need for threshold-degrees (World Bank 1995: 79).

Communication. As the data-pyramid (Figure 1) shows, indicators should not contribute to data-graveyards, but mediate prepared empirical cognition or results. The provision of condensed information will improve the clarity and make the communication about complex circumstances much easier (reduction of complexity).

Forecasting. Indicators can also be used as instruments for the estimation of future trends and for the acquisition of information about possible problems occurring.

Focusing. Indicators can be an effective tool for focusing the interest of target groups in the public, policy, administration and media sectors on facts that so far have not been given adequate attention. Focusing on such neglected aspects creates the necessary basis for knowledge and also a basis of consciousness for a new regulation of social priorities and national politics.

Political Control. *"The primary purpose of indicators is to guide decision makers in their actions, and to ensure that the impacts of their decisions is measured"* (WWF and NEF 1994:1). For the construction of indicators of sustainable development it is necessary to determine the targets, limiting values and threshold degrees first or at least to determine the desired direction as a reference framework.

Check of Effectiveness. In evaluating target systems and conversion successes, indicators are used to measure the degree of the targets achieved.

1.4 Threshold degrees and limiting values of indicators

The explanation of the functions also showed that the construction and use of indicators does not necessarily presume the determination of concrete targets for action (in German: "Handlungsziele"). In scientific research, the data may, for example, just be used for analytic purposes. But in the field of applied indicator research and within the public and political debate about indicators it is, however, required to determine targets which should be reached. There are already, for example, several threshold degrees for environmental indicators concerning the protection of human health derived from scientific insights.

1.5 Differentiation characteristics

Having determined the fundamental purposes and functions of indicators, the most important characteristics of indicators will now be described. There are seven aspects that are of special importance for a selective typology of indicators.

Descriptive or Systemic Indicators. Descriptive indicators clarify the recognizable level and are limited to looking at certain isolated phenomena e.g. the emission of carbon dioxide as an index for the load of the atmosphere by greenhouse gases. Systemic indicators try to realize hidden structures and processes. The interrelations and interfaces between individual subranges of the regarded totality do have a special relevance for complex circumstances (Fues 1998: 29).

Static or Dynamic Indicators. From a temporal point of view, static indicators measure data at a determined point in time, for example, the size of nature protection areas at the end of the year. Dynamic indicators represent the data of a certain period, e.g. the wood increment in a year.

Objective Reference Level. "Level-indicators" measure an average value at a certain date, for example, the average forest area per capita in a country (Germany 0.14 ha forest per capita, Finland 4.7 ha forest per capita (Metla 1999)). "Distribution-indicators" show the differentiation of a value regarding different characteristic groups, for example share of export income earned from forest industry products (Finland: 36%, Germany: 3% (Metla 1999)).

Causal Reference Level. Information about political or social interventions can be differentiated into "Input" and "Outcome" which are the two different categories of the causal coherency of the effects. For example, expenditures to pay subsidies for site adapted afforestation as an input-indicator and forest area covered by site adapted forestry as an outcome-indicator. In general, outcome-indicators are considered to have more force of expression than income-indicators (Nohlen 1991: 324).

Dimension. Dimensional indicators can be expressed in certain units, for example, money in pounds, absolute number of endangered plant species or the surface of protected areas in hectares. In the case of non-dimensional indicators, the basic data are modified by arithmetic operations so that they assume unitless numerical values, e.g. the Gross National Product (GNP). Monetary assessment is not seen as suitable for

indicators of sustainable development, because the economic benefit of, for example, a plant species is just a part of its total value and the consequences of its absence for the stability of the ecosystem can be barely estimated (Blöchlinger et al. 1995: 141; Dixon et al. 1995).

Measurability. Indicators help to determine measurable insights about the regarded circumstances. The collected information can be quantitative or qualitative. Furthermore, data can be differentiated in nominal², ordinal³ and cardinal⁴ characteristics.

International Comparability. One important characteristic of indicators, which increases the sense of their application, is their aptitude to be compared on an international level. In natural sciences like forestry there are not so many problems with cultural, political or social factors which could be contraproductive towards a standardization. It is, for example, possible to calculate the yearly emission of greenhouse gases for each country which represents its part towards the destruction of the world climate. The national data can be aggregated on a global level without any problems and put into relation to capacity of the whole atmosphere.

1.6 Criteria of choice

The representation of the characteristics of indicators dealt the theoretical determination of the most important classification categories for indicators. The following paragraph deals with the question of which criteria are most important for the practical use of indicators. The selection raises the problem of identifying possible factors that could be considered as particularly significant and best representing the circumstances (Nohlen 1991: 324; Nohlen and Nuscheler 1993: 78). The following criteria are considered to be particularly important for the selection of indicators (Fues 1998: 32).

Before the question *how* something is to be measured is asked, it is necessary to clarify *what* is to be measured. Therefore an analytical model is needed to derive the connection between the relevant circumstances and the indicator. Indicators should be theoretically founded and empirically significant.

The desired data should be of high quality, the costs of data collection should not be very high and the data must be updated regularly. The quality of the data is very much dependent on the reliability of the survey methods which should meet technical minimum requirements. Problems of data availability and adequate data quality are: general lack of databases, insufficient management of data processing and lacking trustworthiness (fear of manipulation by certain interest groups) (MacGillivray and Zadeck 1995: 10). In spite of very good databases in several countries, there are wide gaps concerning central problems even in highly industrialized countries, for example, in the case of controversial topics of domestic affairs like social inequality (Willcocks 1995: 82). The availability of environmental and social data with a high force of expression is a general problem in several southern countries (BMU 1992c: 282).

² e.g. Yes/No-answers or descriptive characteristics

³ possible is just an hierarchic correlation of data; comparative

⁴ all kind of arithmetical calculations are possible

An important criteria for the acceptance of an indicator is its relevance to the problem, its scientific viability and its relevance for political decision making and control. This presupposes that the effects of the interventions are operational and measurable, and that they can be used as a basis for the control of efficiency. The data should be easy to interpret and reveal trends in time in order to be able to point out the successes or failures of human influences. The relevance to policy increases if there are already politically decided threshold degrees (Fues 1998: 34). However, the use of indicators is not just based necessarily on the fact that they are best suitable to make objective predications about the status of a system but on the fact that there is obviously consensus that they are able to do so. Indicators are thus subjectively and consequently dependent on the agreement of those who set up and use the indicators (ICLEI 1999).

Also the criteria of communication is very important for the users of the indicators. The understandability of indicators is very important if they are to be accepted by target groups, mainly in the public and policy areas. They are unable to understand the relevant information if it is not aggregated or reduced in complexity.

One important goal for the construction and use of indicators is their international comparability. For this purpose, it is essential to ratify and observe international admitted standards. It is still difficult to compare even simple indicators like "forest area" because the definitions and thus the methods for measuring are different.

The criteria *Relevance for Policy, Communication and International Comparability* appear to be controversial to the criteria *Analytical Foundation*, because there is a danger that the scientific base of the indicators is decreased when using indicators for political purposes. More precisely, scientifically based indicators are frequently less understandable for political decision makers and for the broader public and therefore these analytical founded indicators are hardly ever attended to outside scientific circles (MacGillivray and Zadek 1995: 11). On the other hand, indicators with high resonance which are attractive to the public do very often not have a highly qualified methodical base. Therefore precision and resonance must be balanced in an optimal way to obtain a "warm indicator" and to be comprehensible to outsiders. However, this balancing is finally determined by the subjective preferences of the persons or groups responsible for the selection (Fues 1998: 35).

1.7 Aggregation

In order to increase the communication of indicator systems in the case of complex circumstances, it is necessary to aggregate the information and to reduce the quantity of data. This is possible by the aggregation of simple indicators to complex indices or by determination of primary indicators (*Leitindikatoren*), which should include as much as possible concise aspects of the research subject (Fues 1998: 35). An example of a frequently used highly aggregated indicator is the gross national product.

Aggregation can be seen as problematic because of the subjective, often arbitrary seeming selection of the relevant factors as well as the fact that the characteristic profile of the included subranges will be lost (Fues 1998: 36). Also Henderson (1991: 176) basically discourages aggregation:

"It would be counterproductive if new indicators were to become weighted and averaged together – lending to more fetishizing of one single index, which tries to add up all the apples and oranges into a single number coefficient. This can very soon lead to the same kind of nonsense as the GNP indicators."

Gouzée et al. (1995: 24) do not see aggregation as negative:

"At the problem identification stage highly aggregated indicators probably have the most value. They raise awareness and launch the political discussion. At the stage of policy formulation and target-setting we need more detailed information and models. But the targets should be specific, and measurable – here again aggregate indices can have a role."

The aggregation of different data to a single indicator presupposes the selection of a weighting method for each of the components. The two most common procedures for aggregation which are presently used in the fields of applied indicator research (Walz et al. 1996: 260) are monetary aggregation and aggregation of mega-indicators.

The monetary aggregation method assumes that all relevant components can be put on a common denominator by monetary evaluation. The field of environmental accounting has made great strides in the past two decades, moving from a rather arcane endeavor to one tested in dozens of countries and now well established in a few (Hecht 1999: 14). Some of the earliest research on environmental accounting was done at *Resources for the Future* (Hecht 1999: 15). Also the *World Resource Institute* is experienced in the measurement of nature consumption with a monetary-source-index (Hammond et al. 1995: 23). The *World Bank* derives the indicator "genuine" saving (*Wahre Sparrate*) from national gross saving minus resource consumption and minus the monetary evaluated harm to the environment (Hamilton 1995; Hecht, 1999: 14; World Bank 1997: 7). The already available empirical results show e.g. that the total capital of many countries of the south has been decreasing in the last years – with an increasing population at the same time. This means that a part of the consumption has not been financed by current income, but by consumption of the natural capital (Fues 1998: 37). Another method of environmental accounting is the Green GDP, which is the gross domestic product that includes environmental costs and benefits. Environmental accounting is advocated as a tool to alert policymakers to the broad role of the environment in the economy, for example, comparing conventional GDP with environmentally adjusted (Green) GDP, or conventional savings with "genuine" savings. Both of these indicators can provide valuable warnings of the impacts of environmental degradation on an economy. However, such indicators are less useful in determining the source of environmental harm or identifying a policy response (Hecht 1999: 14).

In contrast to monetary aggregation, the approach of mega-indicators uses material units as a common denominator for a long-range aggregation of very different components. For example, *Wuppertal Institut für Klima, Umwelt, Energie* concentrates on the total economic flow of materials as a main regulation factor for sustainability

(BUND and Misereor 1996: 94; Forum Umwelt and Entwicklung 1997: 31). The total input of material adds up to a total variable by units of weight (tons). The “Ecological Footprint” of Wackernagel and Rees (1997) can represent the total anthropogenic burden of the ecosystems, calculating the land and sea surfaces necessary for the extraction of natural resources and for the disposal of waste materials and emissions. A German person, for example, claimed 5.21 ha of land surface in 1995, although there was just an available bioproductive surface of 2.77 ha per capita. (United Kingdom: 3.57/1.75; Sweden: 5.17/8.41; India: 0.59/0.38; (Wackernagel and Rees 1997: 136).⁵

As an alternative to aggregation, it is also possible to reduce the information by using a selection of master-indicators, mainly on the basis of subjective, heuristically derived criteria. In addition, quantitative statistical methods can be used in order to identify the main factors of influence within a theoretical model. The United Nations Research Institute for Social Development selected 18 master-indicators from the original stock of 73 indicators (UNRISD 1974: 234).

Each of the above presented aggregation methods comprise specific problems. Monetary aggregation is problematic as many social and ecological phenomena cannot be completely or adequately measured in monetary terms (Rennings 1994: 55; Wackernagel and Rees 1997: 66; Hecht 1999: 14). The monetary assessment of environmental damages might be very appropriate in the sense of improving economic data-bases, but it cannot reflect the total value of nature itself and its values for human beings. Aesthetic, cultural or religious dimensions of nature cannot be assessed in an economic way. The estimated monetary values can therefore show only a small part of the loss caused by nature consumption, particularly in the case of irreversible damages, like the extinction of a species. Conversion and calculation on the basis of material units enforces the standardization of different negative influences and neglects their specific chain of cause and their effects to the ecosystems (Fues 1998: 40). These problems of aggregation refer to the necessity to use such methods in each individual case only after careful consideration of the pro and cons. A maximum of transparency must be ensured so that the users of the aggregated indicators can form their own opinion about the weaknesses of the method.

1.8 Basics and requirements for indicators of sustainable development

The international debate about sustainability is based on the following definition of Brundtland (World Commission on Environment and Development 1987):

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

⁵ in 1997 the worldwide available surface was 1.4 ha per capita. The calculated claim is 1.7 ha per capita, which exceeds the actual amount of surface (Wackernagel and Rees 1997: 125). This is possible because of the fact that some people consume the nature capital itself and do not just consume the natural interests.

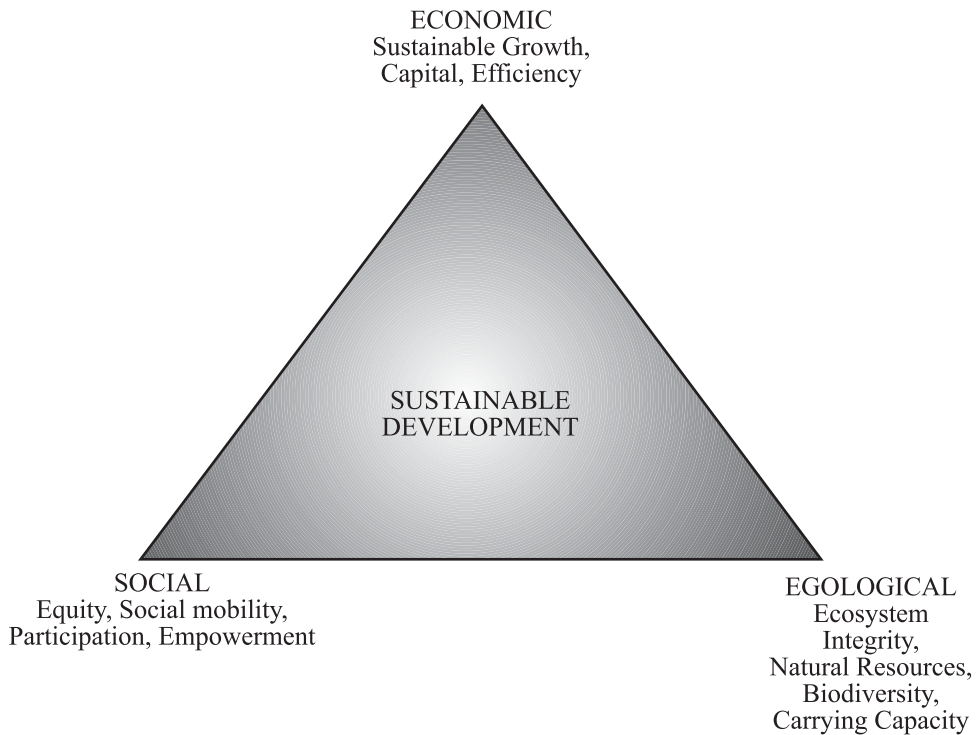


Figure 2. The "Magic Triangle" of Sustainable Development. (Source: Serageldin 1996:23)

The Brundtland-definition points out that intra- and intergenerational justice of distribution are the main components of sustainable development. However no definite model for the general context between natural and human systems can be based on it. Agenda 21, the product of the United Nations Conference on Environment and Development in Rio 1992 and the results of the follow-up conferences make it clear that sustainability can be described by five dimensions. They are ecological, economic as well as social aspects, which are regarded in a certain temporal and in a certain spatial (equivalence of the living conditions of different spaces) dimension. The target bundle of ecological, economic and social dimension is also called "Magic Triangle" (Bruns 1995; Serageldin 1996: 23).

The following requirements of indicators of sustainable development are the results of the definition of sustainable development and the analytic model (Magic Triangle).

Normativity. The use of indicators of sustainable development assume that the target of a worldwide sustainable development cannot be reached (Overshooting) and that there will be a development, not saving the survival of humankind (Meadows et al. 1993). This scenario, which signalizes an urgent requirement to react, does not only require the scientific survey of the status quo but requires additionally that desirable ecological, economic and social targets are formulated. For this reason, Opschoor and Reijnders (1991: 7) characterize the indicators of sustainable development as normative values: "In a sense, therefore, sustainability indicators are normative indicators: *they relate actual, "objective" developments to a desirable condition or goal.*"

Long-Range. Indicators of sustainable development do not aim at a moment-referred stocktaking and the handling of an acute problem. Their range is created on the long-term stability conditions and the action requirement derived from it (Opschoor and Reijnders 1991: 7). Dahl (1995: 3) describes the requirements as follows: *“To incorporate the sense of time, we need a new kind of accounting, bringing in the temporal dimension, in what might perhaps be called ”chrono-economics”. Any measure of balance cannot look only at the static situation at one moment, but must look at measures integrated over time to document processes and trends.”*

Scope. Sustainable development must to be put into practice on all action levels, from the local to the global level to be able to ensure intra- and intergenerational justice.

1.9 Problems and limits of indicators

The construction and use of indicators is influenced by normative factors, because they are dependent on the system which should be represented, and also by the researcher. The researcher's interest is led by the purpose, for which the indicator is going to be designed (Fues 1998; 40; SRU 1994: 92). It is of special importance that with the selection of indicators, value judgements have to be decided, and not just at that point when with the help of these indicators the threshold-condition is formulated (BUND and Misereor 1996: 38). In the field of a precautional environmental protection indicators should allow quantitative conclusions about the cause. Strictly suitable indicators are therefore only driving forces or pressure indicators – e.g. emissions vs. immissions. Indicators describing the status of an environmental medium do not usually allow cause-specific, quantitative prognoses, therefore they can only be used as reference values. Indeed it is also possible to formulate targets for state-indicators but because of the fact that they can just be compared retrospectively with statistic data, they are only conditionally suitable for threshold values. (ICLEI 1999b).

A literature search resulted in the following examples of the suitability of indicators:

- Indicators can help to focus public attention, to shape consciousness and indicators can support communication about key issues, priorities and action strategies (Corvalán et al. 1995: 4; Department of the Environment 1996: 2).
- Indicators help to quantify the problems, to weigh different options on how to react and how to evaluate the urgency of the requirement to react (Fues 1998: 41, BUND and Misereor 1996: 38).
- Indicators offer a common conceptual framework, which facilitates decision making and consensus finding to the persons taking part in the process (Fues 1998: 42).
- Gouzée et al. (1995: 24) point out that at the implementation and evaluation stage indicators are absolutely necessary in order to find out whether the policy is working and to measure progress.
- Indicators make decision bases more transparent and enable an evaluation of decisions and solution strategies by persons who are not involved in the process (Fues 1998: 42; BUND and Misereor 1996: 38).

A second literature search shows what indicators cannot clarify:

- Indicators are used abusively if they are regarded as independent values and if the basic relationship to the regarded circumstances remains unconsidered (Fues 1998: 41).
- The Department of the Environment (1996: 2) points out that *"while indicators certainly help to focus on the key issues and highlight some significant trends, they do not by any means give the whole story. They are by their nature simplifications. They also relate only to areas which can be readily quantified and aggregated in a meaningful way to give national statistics."*
- WWF and NEF (1994: 2) speak about the danger, *"that the power implicit in the indicators used for decision making will lead to the selection of unsuitable indicators or their misapplication."*
- The interest of certain groups can be unevenly balanced in an indicator system (Fues 1998: 42).

2. EMPIRICAL ANALYSIS

2.1 Method

In addition to an analysis of the common literature about the work with indicators for sustainable development, interviews with experts from Germany and Finland were conducted in order to get updated information.

The members of the German Commission of Sustainable Development were chosen as German experts. This commission includes 23 members: 5 working in federal agencies (G-FA), 2 in the business and productive sector (G-BPS), 4 in the academic sector (G-AS) and 12 in non-academic research institutes (G-NARI). 8 of them agreed to be interviewed (working in federal agencies (1), academic sector (3) and non-academic research institutes (4)). The coordinator of the commission, located at the Federal Environmental Agency in Berlin, was also interviewed. In addition, 13 other scientists were chosen and interviewed because of their relevant publications in the field of sustainable development indicators (3 are working at federal agencies, 6 in the academic sector, 3 in non-academic research institutes and 1 is a member of the local government (G-LG)).

Derived from hypotheses, 27 questions were asked: 5 questions concerning indicator systems, 17 questions concerning sustainable land use and 5 questions concerning the catalogue of criteria and indicators.

The Finnish National Commission of Sustainable Development (FNCSO) is much more extensive than its German counterpart. This commission includes 65 members: 8 are ministers (F-Min), 8 members of the parliament (F-Par), 17 working in ministries (F-M), 10 working in other federal agencies (F-FA), 2 members of the local government (F-LG), 3 in the academic sector (F-AS), 1 in the business and productive sector (F-BPS), 6 represent interests groups (F-IG), 7 non-governmental organizations (F-NGO), plus 3 other members (F-O). In addition, the secretary general of the FNCSO and 3 of his assistants (F-Cen) as well as 11 scientists (F-S) were included as of experts.

Because of budgetary and organizational reasons this survey was done in written form with the same questions which were used for the oral interviews in Germany. Altogether 80 questionnaires have been mailed to the experts specified above, 22 replied (27.5%). One of them was a minister, the others are working in ministries (4), in other federal agencies (5), local government (2), academic sector (1), interests groups (3), FNCSD office (4) plus 2 other scientists. 25 % of the experts refused to answer and 47.5 % did not react at all.

2.2 Results

The following list shows a selection of expert-answers concerning the suitability of indicators:

- They give some kind of comparability globally and nationally. (F-LG) (2*F-M)
- Indicators simplify. (F-LG) (G-FA) (G-AS) (G-NARI)
- Indicators are suitable to give relevant environmental, ecological and social information and are therefore a basis for communication processes. (2*F-LG) (F-Cen) (G-FA) (G-NARI)
- Indicators can be used as tools for planning. (F-M) (G-AS)
- Indicators can illustrate the essential dimensions of the problem. (2*F-FA) (F-LG) (G-FA) (G-AS) (G-NARI)
- Indicators can be helpful basis for analyzing and reporting the state of sustainable development to decision makers (politicians) as well as public. (2*F-Cen) (2*F-FA) (F-LG) (G-AS)
- Indicators can serve the process of target-setting. (2*F-Cen) (F-M) (2*G-AS) (G-FA) (2*G-NARI)
- Indicators are suitable for making the arguments of decision-making readily visible and more objective. (F-FA)
- Indicators are suitable for measuring and monitoring progress of policy implementation and to show whether the development is going towards the objectives of sustainable development. (4*F-Cen) (3*F-FA) (2*F-IG) (2*F-M) (F-Min) (F-S) (F-LG) (3*G-FA) (G-AS)
- Indicators are suitable for guiding and prioritizing future activities. (F-Cen)

The experts were also asked what, according to their opinion, indicators cannot clarify. A selection of the most common answers is listed below:

- Indicators cannot adequately reflect different values. (2*F-FA) (G-AS)
- Indicators cannot tell the whole variety and dimensions of the movement they should be indicating. (F-Cen) (F-M)
- They often do not show clearly enough the interactions between economic, ecological and social dimensions of sustainable development. (F-FA)
- The cultural and social changes are more difficult to be indicated. (F-IG)
- Qualitative improvements are difficult to explain by using indicators. (F-M)

- Indicators cannot tell what other indicators/factors we should be looking for. (F-Cen)
- Indicators cannot make predications about long-ranging developments. (G-NARI)
- Indicators cannot serve as an early warning system. (G-NARI)
- Indicators cannot tell much about political decision making processes. (F-IG) (F-Ces)
- Those things or phenomena that are more or less unmeasurable or are not unambiguously defined cannot be clarified by using indicators. (F-Min) (F-Ces)
- Indicators are not objective nor “innocent” mirrors of reality. (F-Ces)
- Indicators do not clarify connections or causalities between different issues and are not able to describe causes of change in processes or cause-effect relationships. (2*F-FA) (2*F-S) (F-LG) (F-IG) (F-Ces) (2*G-NARI) (G-AS) (G-FA)
- Indicators are often difficult or impossible to combine into one common measure. (F-FA)
- It is not easy to describe by indicators the socio-economic changes or changes in people’s attitudes. (F-M)

3. CONCLUSIONS

In spite of the problem that nearly 50% of the Finnish experts have not yet reacted to the questionnaire, the received answers have been analyzed. This needs to be considered while drawing conclusions from the analysis.

The empirical study demonstrates that the examples from literature for the suitability of indicators have been confirmed to a large extent by the experts. Indicators are seen especially suitable for measuring and monitoring the progress of policy implementation and for pointing out whether the development is going towards the objectives of sustainable development. The literature review was not very fruitful concerning those objectives which indicators are not able to clarify. In this case the chosen experts, who were mainly members of the German and the Finnish Commission of Sustainable Development and well experienced in the work with indicators, stated a long list of objectives which cannot be clarified by indicators. The main point of criticism was that indicators do not clarify the connections or causalities between different issues and are not able to describe the causes of change in the processes or cause-effect relationships.

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III

ANNEXES

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European Summer School on Regional Forest Strategies in Different Forest Cultures of Europe

15-22 August 1999

Marybank, Scotland, United Kingdom

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PROGRAMME

Nordic Research Course on Regional Forest Strategies

17-24 June 1999

Mekrijärvi, Finland

FRIDAY 18TH

- 08.30-09.15 Opening words by Dr. Hyttinen
- 09.15-10.00 Introduction of participants, lectures and agenda by Dr. Anssi Niskanen
- 10.15-11.45 Development issues and future trends in regional development research by Prof. Markku Tykkyläinen
- 12.30-14.00 Regional Forest Programmes: A Participatory Approach to Support National Forest Programme Formulation by Dr. Pentti Hyttinen
- 14.15-14.45 Forest owners' attitudes towards forestry and its implication by Mr. Johan Barstad
- 14.45-15.15 The connection between forest resources and maintenance of rural population in Norway by Mr. Birger Vennesland
- 15.15-15.45 Afforestation projects in relation to rural development in Iceland by Mr. Karl Gunnarsson

SATURDAY 19TH

- 08.30-11.00 Forest sector in socio-economic development: The case of Eastern Finland by Dr. Heikki Eskelinen
- 11.00-11.45 Participatory planning approaches – the new paradigm in political planning by Prof. Gerard Buttoud
- 12.30-14.00 Co-operation and networking among actors in politics and economics by Prof. Gerard Buttoud
- 14.15-15.45 Regional forestry issues in employment and income in Norway by Prof. Birger Solberg
- 15.45-16.30 Research needs for rural development in the context of forestry by Prof. Birger Solberg

SUNDAY 20TH

- 9.15-10.00 Regional forestry issues in employment and income in Sweden
10.15-13.15 Regional strategies for nature conservation in forestry in Sweden
by Dr. Bo Dahlin
13.15-14.00 Methodological issues of cross-disciplinary research on participation in
forestry by Dr. Tove Enggrob Boon
14.15-15.45 Case: Participation, power and policy in Danish forestry – from local to
international by Dr. Tove Enggrob Boon
15.45-16.15 Experiences of regional forest programmes and development of co-
operation by Mr. Kimmo Kivinen

MONDAY 21ST

Fieldtrip

- 8.00 - 10.00 Enocell, Uimaharju by Mr. Ahti Ullgren
11.00 - 12.00 Höljääkä, Nurmes by Mr. Ari Mononen, Iivari Mononen
14.00 - 14.45 Farm, Lieksa by Mr. Kyösti Kuivalainen
15.15 - 16.00 Forestry centre of North Karelia by Mr. Kyösti Hassinen
16.15 - 17.00 Forest and Park Service by Mr. Kyösti Tuhkalainen
Harri Hölttä will tell on Nature conservation during the bus trips.

THUESDAY 22ND

- 09.15-10.00 Prospects for forestry based regional development
by Dr. Andreas Ottitsch
10.15-11.00 Introduction to group work by Dr. Anssi Niskanen
11.00-17.00 Group work
18.00-20.00 Group work continues

WEDNESDAY 23RD

- 08.30-13.15 Composing final report of the group work
13.15-14.00 Evaluation of the developed Regional forest strategy and the
formulation process with regards to the initial strategies of the groups

THURSDAY 24TH

- 09.30-10.00 Summary of the research course by Dr. Anssi Niskanen
10.15-11.45 Final discussion and closing session by Dr. Anssi Niskanen

European Summer School on Regional Forest Strategies in Different Forest Cultures of Europe

15-22 August 1999

Marybank, Scotland, United Kingdom

MONDAY 15TH

- 08.30 - 08.50 Opening words by Pentti Hyttinen
- 08.50 - 09.50 Introduction of the participants, lectures and program by Anssi Niskanen
- 09.15 - 10.00 Emerging regional issues in employment and income in Northern Europe by Markku Tykkyläinen
- 10.15 - 11.00 Future trends in regional development research by Markku Tykkyläinen
- 11.00 - 11.45 Emerging regional issues in employment and income in United Kingdom by Bill Slee
- 12.30 - 13.15 Case: Regional forest strategies, North Karelia by Pentti Hyttinen
- 13.15 - 13.45 Theoretical background of indicators and indicator systems for the assessment of sustainable development by Stefanie Linser
- 13.45 - 14.15 Linking social needs and interests in regional forest planning: Case in France by Laura Bouriaud
- 14.30 - 15.00 Forest sector's contribution to income and rural development in Ireland by Siobhan Carney
- 15.00 - 15.30 Introduction to fieldtrip by Anssi Niskanen

TUESDAY 17TH

Field trip to Cairngorms area (Abernethy, Inshriach, Alvie, Rothiemurchus)

- 09.15 - 09.45 Forestry and economy by Doug Lamont (Forest industry)
- 09.45 - 10.15 Forestry people by Eric Baird (Local authorities and communities)
- 10.15 - 10.45 Forestry and environment by Roland Stiven (Nature conservation)
- 10.45 - 11.45 Visiting around forest lodge, Abernethy and presentation by Stuart Taylor (RSPB)
- 12.30 - 13.00 While driving to Inshriach, presentation by Stuart Benn (Nature conservation)
- 13.00 - 14.00 Visiting in forest and presentation by David Jardine (Forest owner, State)
- 14.45 - 15.15 Presentation by Jamie Williamson in Alvie estate (private forest owner)
- 15.15 - 15.45 Presentation by Colin Wishart (Local authorities and communities)
- 16.15 - 16.45 Presentation by Irine Ross (Forest industry)
- 16.45 - 17.15 Presentation by Duncan Bryden (Recreation, tourism and sport)
- 17.15 - 18.15 Deep briefing within the groups

WEDNESDAY 18TH

- 08.30 - 10.00 Emerging regional issues in employment and income in Central Europe by Andreas Ottitsch
- 10.15 - 11.45 Forest culture and forest policy in Austria: Policy making by sector for the sector by Michael Pregernig
- 12.30 - 14.00 Principles of participatory processes in public decision making by Gerard Buttoud
- 14.15 - 15.00 Negotiation methods to support participatory forestry planning by Gerard Buttoud
- 15.00 - 15.30 Changes in forest uses and forest culture in Greece by Maria Loisou

THURSDAY 19TH

- 08.30 - 10.00 The role of local communities in the decision making process in the Mediterranean areas by Davide Pettenella
- 10.15 - 11.00 Social cists and policy issues in employment and income in Spain by Davide Pettenella
- 11.00 - 11.45 Illegal logging prevention through forest land allocation to private: a case study in Albania by Davide Pettenella
- 12.30 - Group work (groups own expectations)

FRIDAY 20TH

- 09.00 - 18.00 Group work continues (negotiation)

SATURDAY 21ST

- 08.30 - 09.15 Group work (composing the report of the negotiated regional forest strategy)
- 10.15 - 11.45 Evaluation of the developed regional forest strategy and formulation of the process with regards to the initial strategies of the groups
- 12.30 - 14.00 Evaluation of the process for developing a regional forest strategy by Janet Adamson, Willie Towers and Denis Torley
- 14.15 - 15.00 Use of participatory methods in rural development projects -practical experiences by Johan Barstad

SUNDAY 22ND

- 09.00 - 10.30 Summary of the presentations by rapporteurs
- 10.45 - 11.45 Final discussion and closing session by Anssi Niskanen

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